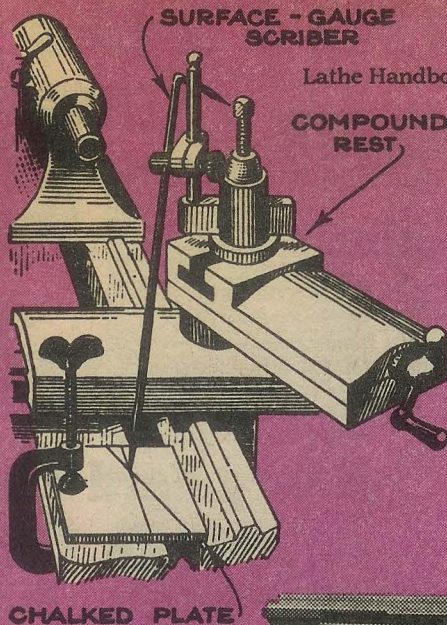


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Lathe Handbook No. 1

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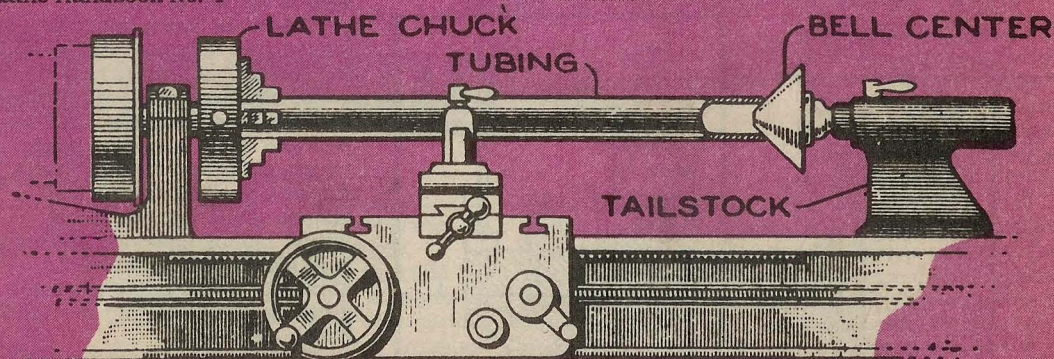
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Lathe Handbook No. 1



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Mechanics Notebook 24
American Machinist 1901 Hints & Tips
 reprinted by Lindsay Publications
 From out of the pages of 1901 issues of
 American Machinist magazine comes this fascinat-

Hits & Tips 1901

American Machinist Magazine

ing collection of articles some of which are practical how-to written by machinists while others are educational. All are interesting.

Learn practical tips on making twist drills, taps and dies. Learn how to turn elliptical tapers, true up chuck jaws, thin brass castings, cut square threads, cut piston rings, make a square socket wrench, make a radius tool for the lathe, make a ball turning device, make a hand-wheel rim turning rig, and how to make an eye on the end of a spring. You'll even see a new (1901) rotary steam engine design.

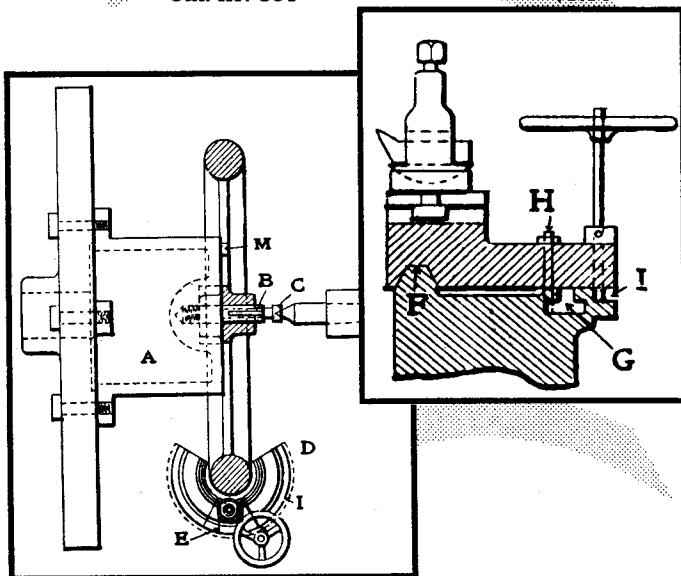
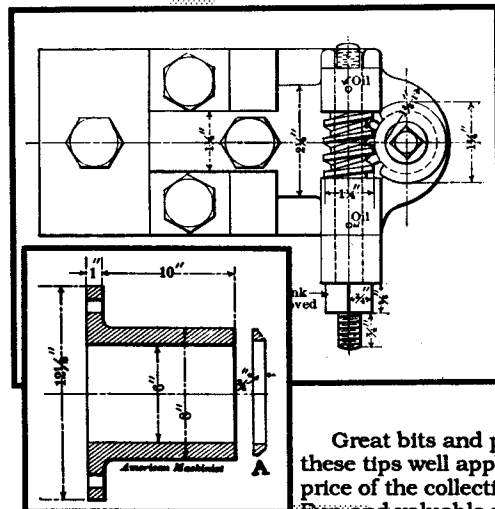
Learn in a lengthy article how light rays were (and still are) used in an interferometer to check

the accuracy of straight edges and lathe beds down to millionths of an inch. Today we use lasers in a similar way. You'll learn how it was done, and the equipment that was used. Maybe you could adapt it to your own needs. Sounds like an interesting experiment.

Great bits and pieces. Anyone of these tips well applied is worth the price of the collection. Consider it. Fun and valuable reading for the ma-

chinent. Order a copy. 5 1/2 x 8 1/2 booklet 31 pages
 Cat. no. 831

\$3.00



SHOP THEORY

by Henry Ford
 Trade School
 reprinted by Lindsay
 Publications Inc

"Eliminating all non-essentials, this book gives

Henry Ford Trade School SHOP THEORY

you a quick working knowledge of the basic tools, machines, and instruments, and the fundamental operations of machine shop work. It tells you how all the machines and tools used were developed, how they are constructed, and how to operate them. It explains heat treatment and gearing. It includes the mathematics needed for shop work, and stresses safety rules. Every step of machine shop work is pictured clearly both in text and illustration. An industry-developed shop course which already has helped prepare thousands of men for payroll jobs."

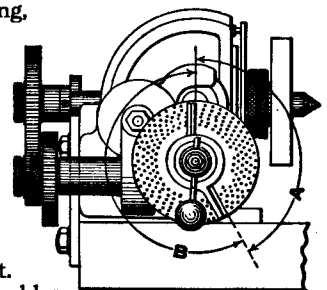
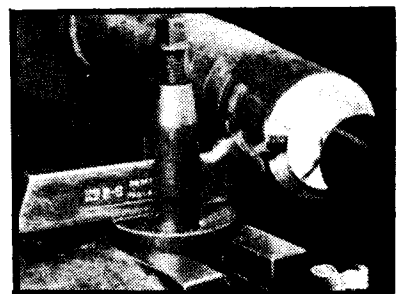
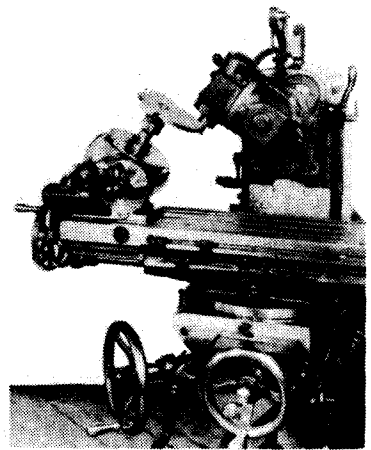
This book started out as mimeographed sheets, but so many people wanted copies that the school published the notes as a book. By the time this edition was released more than 150,000 copies had been distributed to schools all over the country. And it no doubt helped win World War II.

This is the entire '42 edition typewritten, loaded with drawings and photographs. Chapters include decimal equivalents, formulas, small tools, rules, micrometers, vernier gages, chisels and chipping, hack saws and sawing, files and filing, soldering, shop review, drills and drilling, tapers, threads, gearing, cutting tools, shaper, planer, lathes, turret lathes, milling machine, gages and gage blocks, heat treatment, abrasives and grinding wheels, grinding machines, and routing of bench tool work.

This is a gem. There are many machine shop books on the market. Although this edition was abandoned by Ford, probably being replaced by something more modern, it is still one of the best books of its type around.

Need a good basic machine shop book? Then get this one. You'll like it. 8 1/2 x 11 paperback 267 pages
 Cat. no. 20064

\$14.95



GEAR CUTTING PRACTICE!

Gear Cutting Practice

by Colvin & Stanley

reprinted by Lindsay Publications

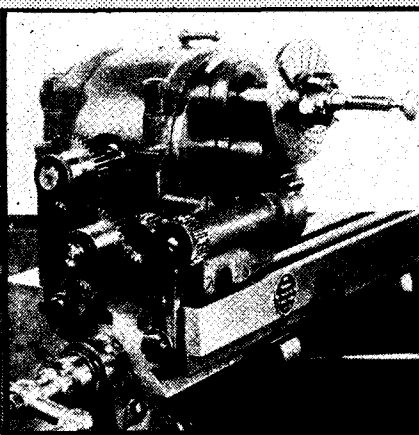
Anyone can beat a piece of metal with a hammer and call himself a mechanic or machinist. But only a true machinist can machine gears that run smoothly, quietly, and with minimal wear. The high gods of machine shop, Mr. Colvin and Mr. Stanley, will teach you how in this reprint of their 1937 text, subtitled "Methods for Producing Gears for Commercial Use."

Chapters include gear cutting practice, spur gears and circular cutters, shaping method of cutting gears, helical and herringbone gears, hobs and cutters, bevel gears, worms and worm gears, internal gears, heat treatment, burnishing, shaving, lapping and grinding gear teeth and more!

This book was written for industry so there will be a lot of material you can't use. But it's better to get too much info rather than not enough. You'll get an education in gear geometry, the best alloy compositions to use for gears (in 1937), specs on keyways, using the dividing head, comparison of hobbing versus milling gear teeth, commercial hobbing machines available, vertical shapers designed for cutting gears, details on hobs, their use and sharpening and on and on.

Again, you'll see a lot of big machinery since this is an industry text.

NEW! 



A Colvin & Stanley Classic From 1937

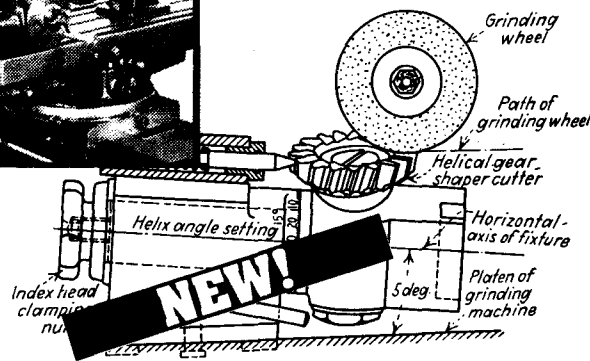
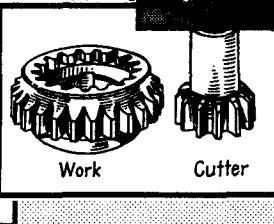
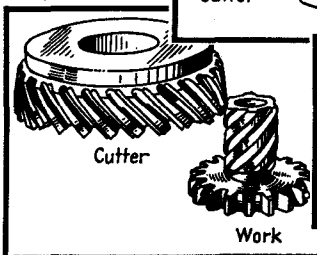
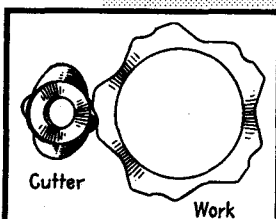
But you'll find out how the pros did it, and you can adapt it to your own small shop needs. The gears these guys turned out are probably still use in industry, in tank transmissions, and probably ended up in WWII B-17 engines.

Quality was paramount.

You get charts, tables, nomographs, photographs, drawings, and more. It's heavily illustrated. If you cut gears or ever intend to, this reference will teach you something practical even if you only have a 3" lathe with a milling attachment. A standard work by the standard dynamic machines shop duo: Colvin & Stanley. Get a copy! 5 1/2 x 8 1/2 paperback 344 pages

Cat. no. 20889

\$13.95



Art of Engraving

The Art of Engraving

reprinted by Lindsay Publications

"A Practical Treatise on the Engraver's Art, with Special Reference to Letter and Monogram Engraving"

Originally copyrighted in 1903 by the owner of The Keystone, a magazine published for the jewelry and optical trade in Philadelphia, this unusual book teaches beginners how to get started using gravers to cut beautiful designs and letters into metal.

Chapters include mechanical drawing, tools and materials for beginners, first exercises, block letters, methods of cutting block letters, script letters, cutting lower-case script letters, the formation of script capitals, looped script, practical use of script letters, engraving coffin plates, en-

graving thimbles and inside of rings, engraving inscriptions in script, method of cutting Old English, shaded Old English, engraving spoon handles, designing and engraving ciphers,

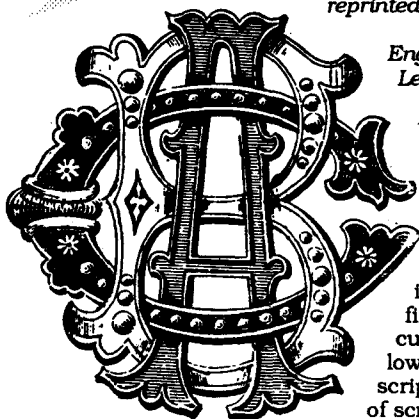
flower leaf ciphers and more!

You'll learn about gravers and their care, engraving tables, engraving script in metal, ivory, and even pearl. The illustrations you find are mostly concerning letters, their style and the method in which they should be cut. What you learn here are the secrets that went into engraving so many of the fantastic trophies, jewelry, and trinkets that we find in museums and antique stores (at big prices!). It was all done by hand.

This is a technique that many people are still trying to learn. It is definitely an art, a skill, and not a machine shop technique. If you're into making knives, guns, spinning metal, creating jewelry or any type of decorative art, this is a rare book worth having. Get yourself a copy and put it in your reference library today! 5 1/2 x 8 1/2 paperback 199 pages

Cat. no. 20617

\$9.95



1895 Tool Catalog
Chas. A. Strelinger & Co.
reprinted by Lindsay Publications

Here is by far the most interesting tool catalog I've ever seen! With wall-to-wall engravings you'll see every tool a 1895 machinist could possibly want, from calipers and rules to lathes, milling machines, drill presses, steam engines, boilers, and even fire trucks! You'll find fascinating commentary reprinted from *American Machinist* magazine that throws a good many ideas at the reader encouraging him to clean up his act and

Strelinger 1895 Tool Catalog

try something new. This is a time machine with which you can go back to visit an old machine shop.

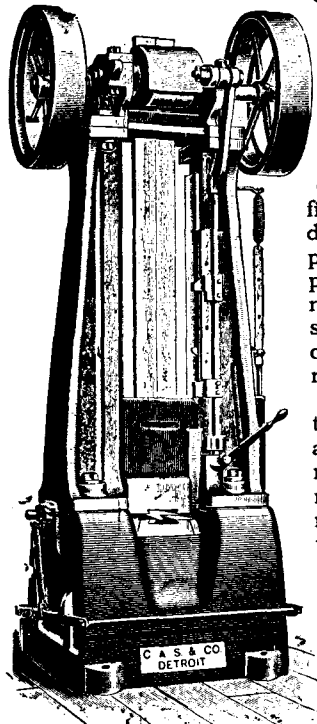
You get well over 500 pages of "A Book of Tools, being a catalogue of tools, supplies, machinery and similar goods used by machinists, engineers, blacksmiths, model makers, founders, moulders, draughtsmen, inventors, and amateurs, and manufactories, mills, mines, etc., etc. Chas. A. Strelinger & Co., manufacturers and dealers, Detroit, Michigan, U.S.A."

Whaddaya lookin' for? A four-jaw chuck? A surface plate? No problem! Back then you could order an open back single-acting punch press, a 16" engine lathe with plain gib rest and taper attachment, a 6" B&P Shaper, a Snyder drill press, a Brown & Sharpe surface grinder, Roger's saw filer and gummer, locomotive oilers, a 19 hp 7x8 Climax horizontal steam engine, an H&H 8 hp portable steam engine and boiler, a Springfield gas engine, and even a horse-drawn fire truck! You'll find lots of engines, safety valves, indicators, steam pumps, clutches, pulleys, flywheels, even telephones, clocks, gauges (ammonia, compressed air, etc), spinning lathes, packaging machinery, and much, much more.

This is full tilt! ...something any machinist, restorer of machine tools, machine designer, tool collector, or historian should have. — no ands, ifs, or buts! This was reprinted at the suggestion of a retired Smithsonian curator, and the original he loaned us is yellow, brittle, and falling apart. It had to be saved.

Get a copy of this. Yes, it's expensive, but it's worth it. Like everything else in this catalog, it's guaranteed. And like everything else in this catalog, it's quality, so you don't even really need a guarantee. It's the best tool catalog I've ever seen. Recommended. Order a copy. 6x9 sewn paperback about 560 pages heavily illustrated
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CHAS. A. STRELINGER & CO., DETROIT, MICH., U. S. A. 915

20, 22, 24, 27 AND 30 INCH BEED ENGINE LATHES.

FIG. 809. 24 INCH SWING ENGINE LATHE.

FIG. 810. 30 INCH SWING ENGINE LATHE.

The above named sizes of lathes will correspond to the description given of the 18 inch on page 913. All sizes from 20 to 30 inch swing are provided with a Side Tool Block, for turning work as large as the lathe will swing.

With these lathes are included large and small Face Plates, Center Rests, Screw Gears and Wrenches. We can furnish, at an extra price, Taper Attachments on the 20, 22 and 24 inch sizes.

20 INCH LATHE.
 Price, \$*. Swing, 20 inches; between centers, 3 ft., 9 inches; length of bed, 8 ft.; weight, 3100 lbs.

22 INCH LATHE.
 Price, \$*. Swing, 22 inches; between centers, 5 ft., 9 inches; length of bed, 10 ft.; weight, 4050 lbs.

24 INCH LATHE.
 Price, \$*. Swing, 24 inches; between centers, 7 ft., 5 inches; length of bed, 12 ft.; weight, 5035 lbs.

27 INCH LATHE.
 Price, \$*. Swing, 27 inches; between centers, 6 ft., 6 inches; length of bed, 12 ft.; weight, 5560 lbs.

30 INCH LATHE.
 Price, \$*. Swing, 30 inches; between centers, 6 ft.; length of bed, 12 ft.; weight, 7550 lbs.

Extra lengths of beds for above lathes at an extra cost of \$* per ft.

*Prices furnished on application.

One of the best tool catalogs you'll ever see!

SPECIAL QUALITY HARDCOVER EDITION for libraries and collectors. Only a fraction of the printing has been so bound. May be out of stock for long periods of time depending on supply and demand.
 Cat. no. 20706
 \$29.95

by Robert H. Smith

reprinted by Lindsay Publications

Here's the best general machine shop book I've ever seen old or new. Smith brought out this book in 1915, updating it in 1925. That makes it new enough to still be of great value, but old enough to contain a many techniques that are no longer taught.

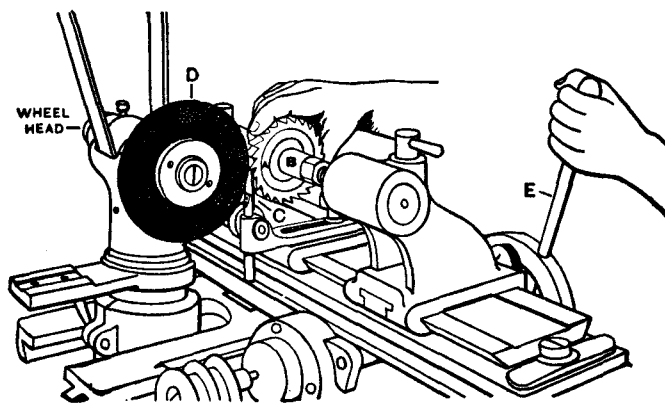
You get easy-to-read text, step-by-step instructions, and great illustrations. Modern books are prettier, but they cannot possibly do a better job of teaching.

"Advanced" covers everything you can imagine from basic operation of a microme-

ter and vernier caliper, to the testing of machine tools for accuracy. You'll learn the different methods of turning tapers and their fitting, detailed instructions on cutting threads, making bolts and nuts, face plates and chucks, mounting work, turning flanges and pulleys, boring, threading, cutting square threads bolts and nuts, cutting multiple threads, knurling, and much more.

You'll learn about drilling jigs, eccentric turning, facing large cylinders, use of steadies and followers, external and internal grinding, and the grinding of piston rings, milling cutters, reamers, and more.

Chapter nine covers planers and their use. Learn to plane keyways, lathe beds,



vices, and more.

In learning to use a milling machine you'll groove taps, flute reamers, mill T-slots in a circular table and more.

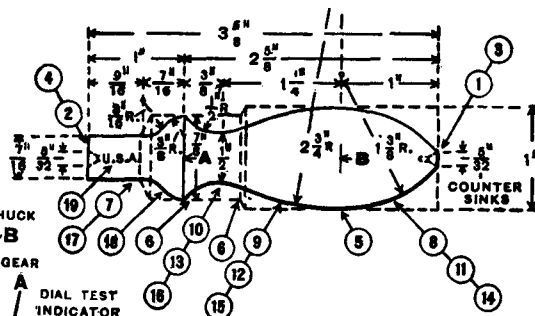
And there's so much more on everything from gear cutting to making mandrels, taps, twist drills, using indicators, sine bars and more. You'll learn how to make expensive tools that you now buy. You'll even learn how to check the accuracy of lathes, milling machines, drill presses, and lead screws, and even use of optical flats to measure to millionths of an inch!

Just about everything you can imagine in amazing detail. This baby delivers! A bargain! Worth twice the price. I recommend it highly. People rave about it! Order yourself a copy today! 6 x 9 hardcover 800 pages heavily illustrated

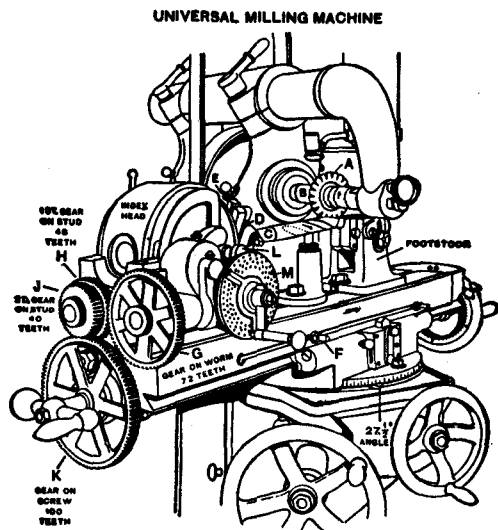
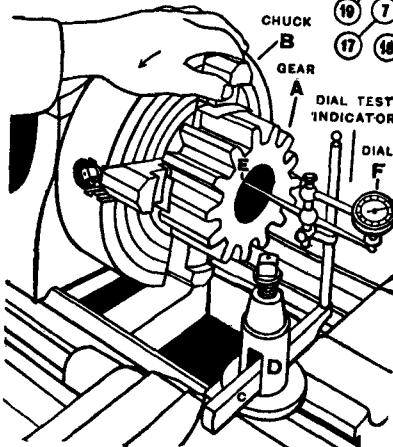
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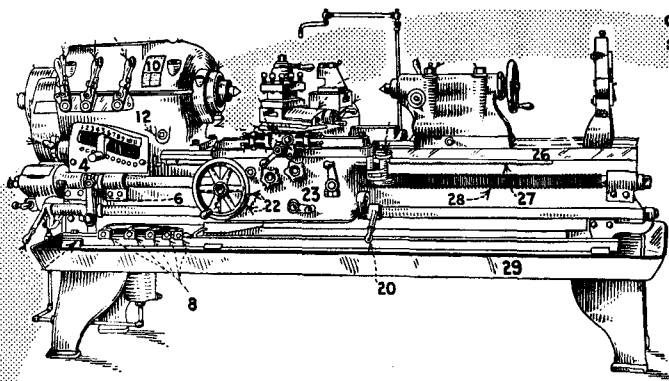
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"Prepared for students in technical, manual training, and trade schools, and for the apprentice and the machinist in the shop."



A "Must Have" Machine Shop Reference!





Running an Engine Lathe

RUNNING AN ENGINE LATHE

by Fred H. Colvin

"Practical suggestions which will give the young machinist or apprentice the foundation principles of engine lathe work."

If you're just starting out using a metal cutting lathe, or you're trying to learn techniques you feel you should have known all along, then grab this. This small, but jam-packed book will show you all the basic techniques of running a lathe.

Thirteen chapters cover the engine lathe, centering lathe work, driving the tools and turning, steady and follower rests, faceplate work, chucks and chucking, boring tools, taper turning, cutting screwthreads, test indicators and their use, three types of centering mandrels and care of the lathe.

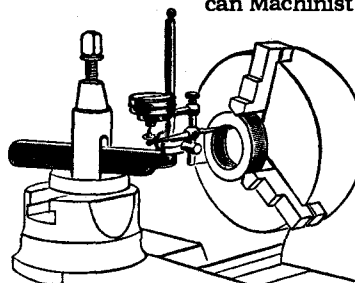
You'll learn all about essential operations in easy-to-read and understand text illustrated with simple, clear drawings. You'll learn about different kinds of dogs (not the barking type), split

collars, toolholder and bits, work with shoulders, boring the end of a bar, home-made follower rest, saving a poor casting, bridle for faceplate work, slotted chucks for flat work, precision drilling, boring cylinders, ways of figuring tapers, rapid thread cutting, cutting a double or triple thread, cutting Brown & Sharpe worm threads, using dial indicators, and much, much more.

There are many tables describing tapers, V threads, square threads, ACME threads, grinding angles on many different tools, and more.

The author was an old man when he authored this in 1941. He was editor emeritus of American Machinist magazine, and

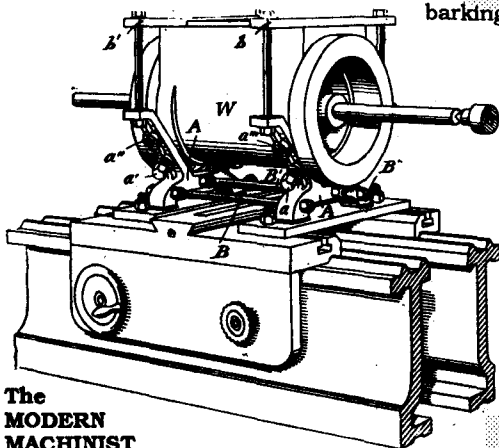
was the Colvin of Colvin & Stanley fame that turned out American Machinist handbook and countless texts. The man was an expert machinist.



Here's a great little book at a great little price that you can't afford not to have, especially if you consider yourself a beginner on a lathe. Excellent book! Bargain price. 5 1/2 x 8 1/2 paperback 117 pages

Cat. no. 4708

\$4.95



The MODERN MACHINIST

by John T. Usher
reprinted by Lindsay Publications

This is an 1895 machine shop manual for the steam engine man. You'll learn how to erect a traction engine, set up the boiler, set up stationary engines, and more. You'll find many sections within each chapter that discuss such things as drift pin and drift wedge for removing piston rods from the cross-heads; planing key-seats in crank shafts; chucking engine beds, cylinders, etc., for planing; boring and drilling attachments for lathes; boring and turning connecting-rod brasses and cross-heads on the monitor chuck; turning and boring packing rings; boring and turning cylinders. And much more. All

Be a Steam Engine Machinist!

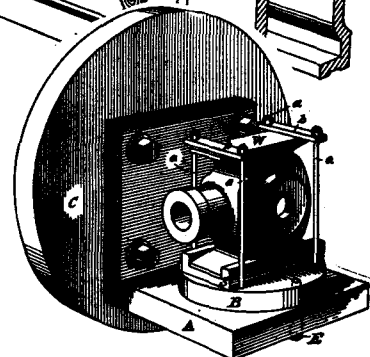
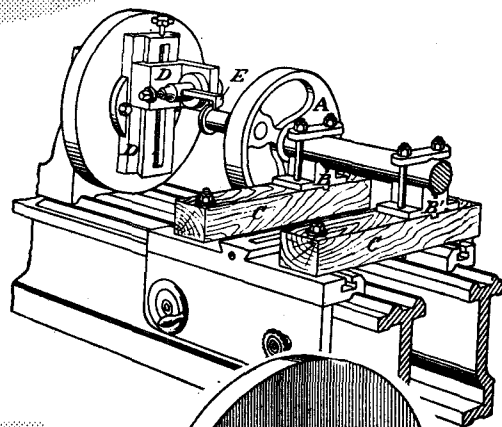
Usher's 1895 "Modern Machinist"

with detailed illustrations.

The 35 chapters cover measuring instruments; vise work; chasing; erecting; planing, shaping, slotting; milling; lathe work; items of interest; and drilling.

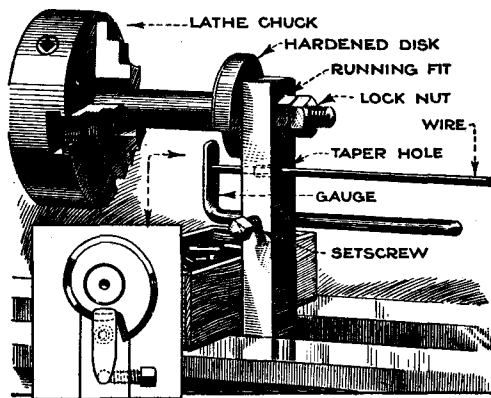
Even if you never use this material, you'll find it fun to read. The illustrations are great. I can almost imagine myself back a century ago machining castings and assembling an engine destined for a factory powerhouse. It must have been very satisfying to watch a complex machine take shape.

You can still do it - in miniature if nothing else. And this book will show you



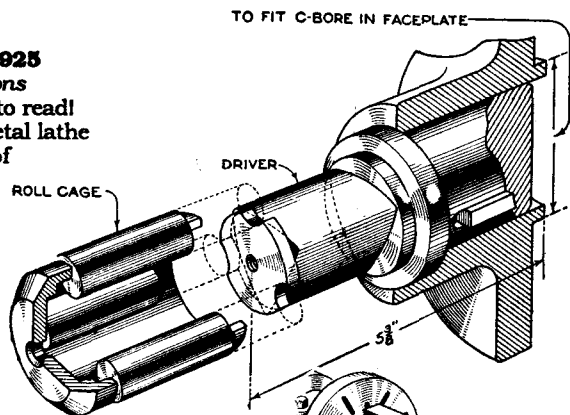
how. A great book for model engine enthusiasts. A great book for machinists. A great book for book-a-holics! (That means you, son) Get a copy today! 5x7 paperback 322 pages
Cat. no. 20501 \$12.95

A
Classic
Text by
"Mr.
Machine
Shop"
himself!

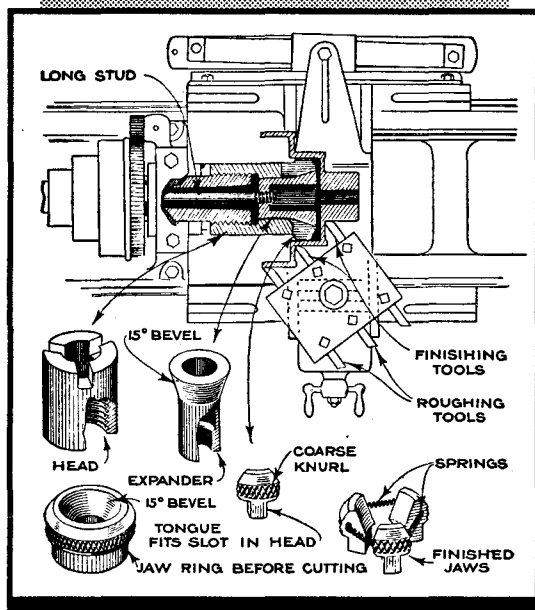


Popular Mechanics
LATHE HANDBOOK No. 1 - 1925
reprinted by Lindsay Publications

Great book! Incredibly fun to read!
 You get a compilation of metal lathe articles that ran in the pages of Popular Mechanics magazine in the early 1920's. The articles are interesting and informative, the ideas they generate are valuable, and the illustrations are even better! Page one starts with a detailed article on building a 6" bench lathe. Then you get dozens and dozens of smaller,



Popular Mechanics 1925 Lathe Handbook No. 1

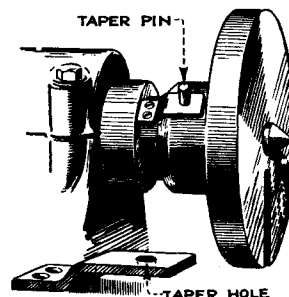
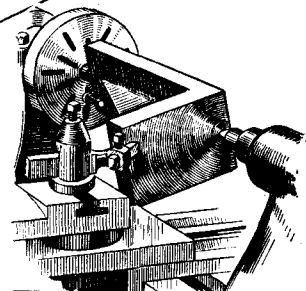


well-illustrated articles describing a simple chip shield, auto hub as lathe and drill press, special lathe tools and attachments, lathe tool for radius cutting, simple relieving attachment for the lathe, and more. Learn how to make a tool holder with a set of cutters, a revolving tool holder for the lathe, a lathe center-hole mandrel, ball-bearing tailstock center, adaptable jig for turning pulleys in a lathe, and on and on. You get plans and instructions for making a variety of indicators, gauges and test jigs.

Hold small screws in the lathe. Support long, thin bars. Build an adjustable universal chuck. Learn about an unusual method used to reface a large wheel on a lathe rigged as a grinder. And there's much more - from straightening a bent reamer and a device for winding spiral springs to making a quick-acting tap holder and milling flutes in taps and reamers.

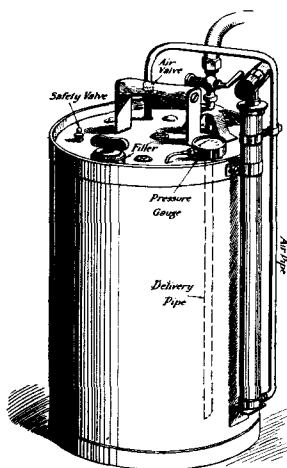
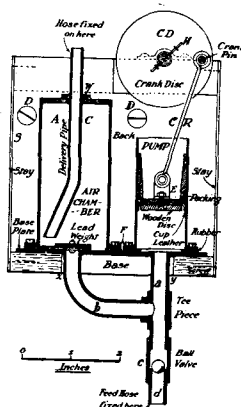
You probably already know many of the hints, kinks, and methods presented here. But there is so much, I'll bet you'll learn something new the minute you page through this jam-packed book. Any machinist will enjoy just looking at the incredible illustrations. I knew this was something that should be reprinted the moment I saw it. You'll like it too. It's inexpensive, and definitely worth having. Order a copy! 6x9 paperback 87 pages
 Cat. no. 20838

\$6.95



Home Mechanics
edited by Archibald Williams

Try your hand at a these World War I vintage projects! Nineteen chapters with 214 illustrations will show you how to build a workbench, an astronomical telescope, a heliograph for signalling, a model steam turbine, an electrical resistance box, a home-made galvanometer (electrical meter), a Wheatstone bridge (electrical test equipment), a simple electric motor, a model railway electric signal, a pneumatic sprayer, a force pump for liquids, a windmill for pumping, model aeroplanes, a model gyroscopic railway, an X-ray machine powered by a Wimshurst machine, a kaleidoscope, and more. Learn about fretwork,

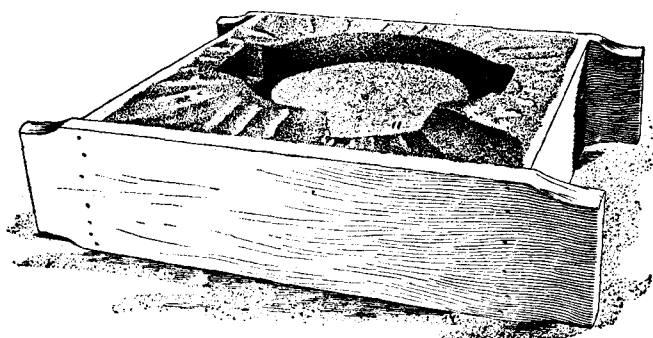


Home Mechanics

overlaying in wood, metals, xylonite, and more. You'll even learn how to build a spark-gap wireless transmitter which would probably get you put in jail if you were to really put it on the air!

You'll find the models are generally not all that complex, yet they really work. Even if you don't build the models exactly as described, you'll at least get great ideas adaptable to other uses.

A great little book of projects. One of the better collections I've seen. I think you'll like it. Order a copy today. 4 1/4 x 6 paperback 297 pages
 Cat. no. 4805 \$9.95



Secrets of Sand Molds!

GREEN-SAND CASTING

reprinted by Lindsay Publications

You've built a small furnace, and you have a ladle of molten metal. What are you going to do with it? Are you going to pour it into an old boot? You had better have a sand mold ready.

You probably already realize that making green-sand molds (the sand isn't really green, just wet) is more of an art than a science. Where to put sprues and runners, vents for steam and gas, and just how hard to ram up the sand are skills that come only with practice.

Old timers will tell you that you can't really learn green-sand molding from a book, and they're probably right. But this book comes as close to revealing the secrets as any I've seen. When you see the gorgeous illustrations, you'll agree.

This is a reprint of chapters from a 1903 technical school textbook. Learn about tools, materials and methods, including sands, tempering, sieves and riddles, rammers, required hardness, deep molds and venting, drawing the pattern, closing and pouring, shaking out the casting, and much more.

Learn about molding by bedding in — a technique in which you build the mold right on the foundry floor in a pile of sand. It's quite a skill to level and set up such a mold.

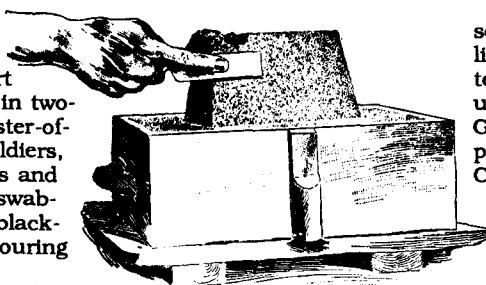
In part three you'll learn about molds for casting iron. You get rare illustrated how-to on making joints for irregular forms, three-part molds in three-part flasks, three part molds in two-part flasks, followboards in forming joints, plaster-of-paris matches, match plates, gagers and soldiers, setting of cross bars, nails and rods at joints and corners, valuable lessons on patching molds, swabbing broken corners, sleeking and printing dry blackening, skin-dried molds, types of gates and pouring basins and more.

Then learn about chaplets, problems such as blowholes, shrink holes, shrinking and contraction, techniques of proper feeding, bench molding with different type of snap flasks, and on and on.

Most of what you learn in this book is on a larger scale than what a home foundryman might need. But the techniques are exactly the same. The illustrations are dynamite! You won't just be told how it was done, you'll see for yourself.

Build Gingery's charcoal furnace. Ram up a mold, melt down some aluminum cans and scrap and make a pour. No matter how good your casting is, you'll want to make it better and more complicated next time. You'll learn how to do just that — right here!

This is one of the essential books for the foundry library. Excellent book. More techniques here than you will use in a month of Sundays. Get a copy! 5 1/2 x 8 1/2 paperback 174 pages Cat. no. 4082 \$9.95



Turn It on a Simple Lathe!

TURNING METAL on a Simple Lathe by John F. Malloy

Turning metal is easy on a modern, expensive metal lathe. Anyone can do it. But have you tried turning metal on a simple lathe such as a wood lathe?

Who would be crazy enough to try that? An expert blacksmith for one. And you'd be surprised at what can be done.

Malloy will show you how to make a cutting tool, temper it with a propane torch, sharpen it, make the first pass, the sec-

ond pass, finish it up, cut high carbon steel, and make additional gravers.

Illustrated but less well described are constructions of a bell chuck and a face plate.

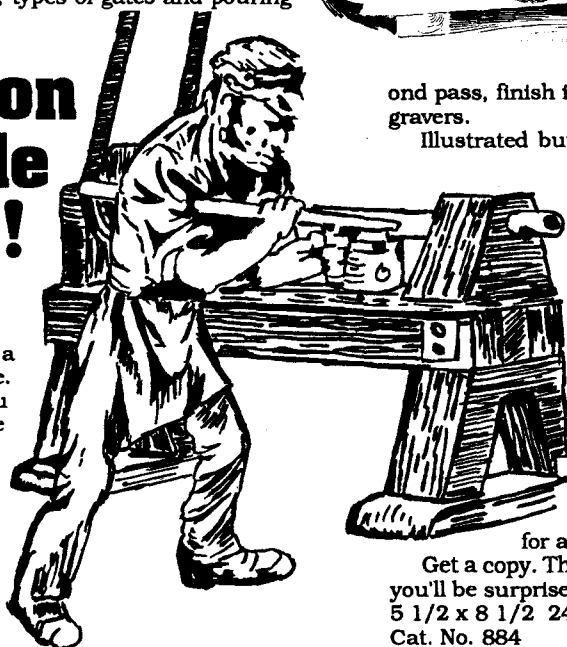
Malloy explains: "The only qualifications that I have is 19 years of general blacksmithing experiences and a terminal case of tinkering." He's made flintlock rifles, tools, and irons, and much more. He first saw freehand turning performed by an expert blacksmith. Since then, Malloy has used the technique to make steam engines, small airplane engines, and a muzzle loading barrel rifling machine. He has also managed to bore a hole 44" deep free hand that was off center by only .010" at the opposite end!

You'll find that Malloy is also a talented illustrator. You'll find a series of drawings (no text) showing how he turned the finned cylinder for a 3/4" pipe tee engine.

Get a copy. This is information that you don't often find. I think you'll be surprised by the accuracy possible! Good reading. 5 1/2 x 8 1/2 24 pages.

Cat. No. 884

\$4.00



Navy Foundry Manual!

1958 Picture Book!

FOUNDRY MANUAL

by the United States Navy
reprinted by Lindsay Publications

Looking for a great foundry handbook? I hate to admit the government ever did anything right, but this 1958 NAVSHIPS publication is a gem. It's loaded with some of the best foundry photos and drawings I've ever seen. You can learn by merely studying the illustrations.

The preface accurately describes the Manual—

"This Manual is intended primarily for use by foundry personnel aboard repair ships and tenders. The recommended practices are based on procedures proved workable under Navy conditions and are supplemented by information from industrial sources."

"The Manual is divided into two general sections. The first section, chapters 1 through 13, contains information of a general nature, such as 'How Metals Solidify,' 'Designing a Casting,' 'Sands for Mold and Cores,' 'Gates, Risers, and Chills,' and 'Description and Operation of Melting Furnaces.' Subjects covered in these chapters are generally applicable to all of the metals that may be cast aboard ship."

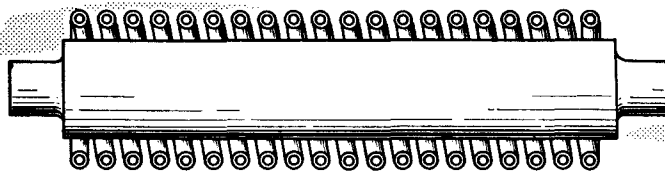
"The second section, chapters 14 through 21, contains information on specific types of alloys, such as 'Copper-Base Alloys,' 'Aluminum-Base Alloys,' 'Cast Iron,' and 'Steel.' Specific melting practices, suggestions for sand mixes, molding practices, gating, and risering are covered in these chapters."

This manual has been written with the 'how-to-do-it' idea as the principal aim. Discussions as to the 'why' of certain procedures have been kept to a



minimum. This manual contains information that should result in the production of consistently better castings by repair ship personnel."

Although it pays to know *why* procedures are performed the way they are, the first step is to perform them. Consider this to be pure practical how-to. It delivers. Excellent book. No two ways about it. If you pour metal, you need this book. Get a copy of this. You won't be disappointed. A gem! 8 1/2 x 11 paperback over 300 pages
Cat. no. 20072 \$19.95



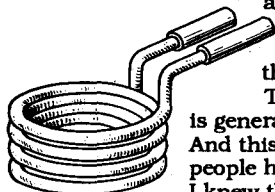
High Frequency INDUCTION HEATING

High Frequency INDUCTION HEATING

by Frank W. Curtis

Wrap a coil of wire around a chunk of metal and feed the coil with high frequency, high power AC current, and before long, the metal will be red hot and then molten.

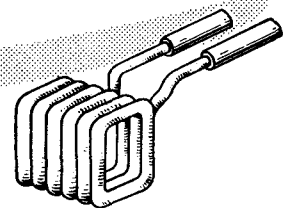
This technique is not a simple one, and is generally not something done in a home shop. And this is NOT a how-to book. But so many people have asked about induction heating, that I knew this book should be reprinted.



This 1944 book covers principles of induction heating, types of equipment, design of heating coils, brazing and soldering, hardening and heat-treating, fixtures for induction heating, miscellaneous applications, designing for induction heating, and dielectric heating.

An ingenious experimenter may be able to take the information and perfect a small unit for home use. Several schematics for the generators are shown including a simple spark-gap unit and a simple vacuum tube design.

Truly a top-rate book on an unusual topic. If you've ever wondered about induction heating, you'll like this. Well illustrated. Easy to read. Very informative. Order a copy. 5 1/2 x 8 1/2 paperback 235 pages
Cat. no. 4716 \$7.95



BRASS!

BRASS HINTS & TIPS

reprinted by Lindsay Publications

From issues of *American Machinist Magazine* published in 1880's and 1890's comes this collection of short articles on the casting and machining of brass.

Articles include tools for working brass such as jigs for holding brass bearings while facing off in a milling machine, a jig for winding brass springs, internal threading tools for making nuts, and

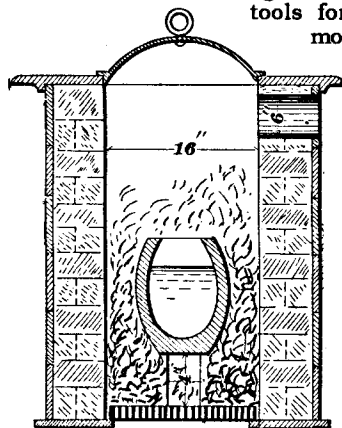
more. Three different articles will show you how to design and build furnaces to melt brass. Letters from readers of that era will give you tips on furnace modification and crucible care, and how to clean brass, remove sand scale, make special cores and so on.

These old-timers will show you how they poured their own brass castings and turned their own bearings. You get many unusual century-old illustrations. Excellent. Order a copy!

5 1/2 x 8 1/2 booklet 16 pages

Cat. no. 849

\$3.00



BRASS FOUNDED

reprinted by Lindsay Publications

Pouring molten brass is somewhat different from pouring aluminum or iron. This chapter from a 1903 technical school textbook will show you the differences. You'll learn about the molding sand needed for brass, blackenings and partings, contraction, gating and feeding, cleaning of castings in tumbling barrels and with pickling, the crucible furnace, a simple brass furnace,

in a battery, increasing the speed of the melt,

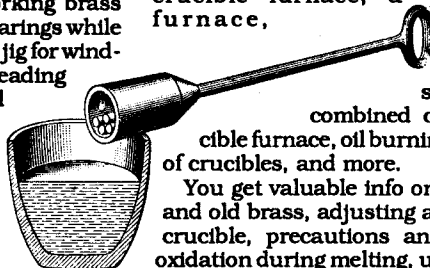
combined cupola and crucible furnace, oil burning furnaces, care of crucibles, and more.

You get valuable info on melting copper and old brass, adjusting and handling the crucible, precautions and prevention of oxidation during melting, use of deoxidizing fluxes, and more. You get info on all the brass alloys, how to grade scrap brass, borings and turnings for melting.

Great info! If you think you'll ever want to attempt to pour brass, then order a copy now! 5 1/2 x 8 1/2 booklet 39 pages

Cat. no. 868

\$4.00



BRASS!

Rebuild & Repair Briggs & Stratton Engines!

HOW TO REPAIR BRIGGS & STRATTON ENGINES 2nd Ed by Paul Dempsey

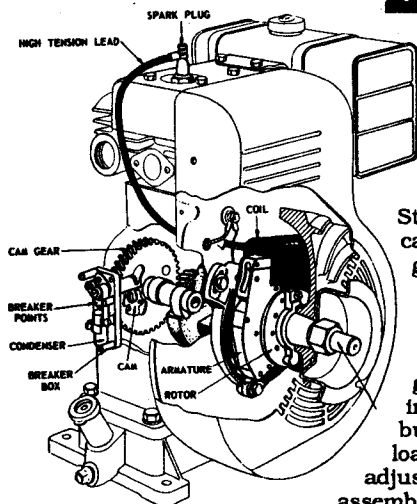
With this book and some scrounging you can recycle old Briggs & Stratton engines. Or you can keep your lawnmower going just one more year. Or build an emergency power plant. Or...

Chapters include: basics, ignition, carburetors, governors, starters, charging systems, and total rebuilding. This book is loaded with practical how-to: adjustments, troubleshooting, assembly diagrams, charts, hints and tips and all the rest.

B&S engines are common. It seems that you should be able to pick up junkers and combine the parts to get running engines at little cost. Good basic repair book. Get a copy. 5 1/2 x 8 1/2 paperback 190 pages

Cat. No. 1265

\$9.95



SODA POP!

Make your own soda! It's easy! And it's great soda!

Build this remarkably simple device using hardware store components, hook it to a bottle of carbon dioxide, and you're ready to make soda. The major expense is the CO2 tank and its regulator. But you'll quickly recover that cost in a single summer.

You can make great root beer, carbonate Kool-Aid, Coca-Cola, and other drinks at bargain prices. You can make gallon after gallon of soda water for ice cream sodas or for mixing with your favorite scotch. Experiment!

It's one of the most useful and popular machines (at least with the kids) I've ever built. A single small tank of CO2 last me about a year, and that's an ocean of soda. Each jug is very inexpensive. Get a copy, and build a

soda pop machine! 5 1/2 x 8 1/2 booklet 22 pages

Cat. no. 88

\$3.00

Make Soda Pop!

Basic & Advanced Patternmaking!

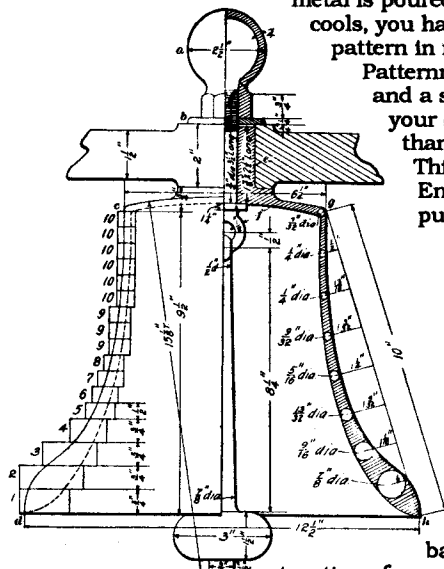
PATTERNMAKING 1905

reprinted by Lindsay Publications

The easiest way to work metal is to create the metal part you need from soft, easy-to-work wood. Then you use this wooden pattern to create a cavity in a sand mold into which molten metal is poured. When the casting cools, you have a exact copy of your pattern in metal.

Patternmaking is both an art and a science. The quality of your casting can be no better than the pattern you use.

This reprint from "Modern Engineering Practice" published in 1905, will



struction of core boxes, multi-piece patterns, and more. You'll learn how to make built-up patterns for pulleys and flywheels, lathe face plates, pipe fittings, engine cylinders, gear wheels and more.

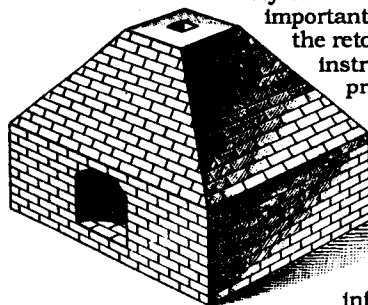
If you pour metal, then you should have this book on patternmaking. Of all the patternmaking books I've seen old or new, this is among the best. Order a copy for your foundry library today! 5 1/2 x 8 1/2 paperback 144 pages Cat. no. 4031

\$8.95

MAKING CHARCOAL AND COKE

If you have plenty of wood, you can easily turn it into charcoal to fire the charcoal foundry, melt cast iron, or even refine iron ore like they did a century ago.

The first part of this booklet tells you the



basics involved in building a charcoal retort, a very simple device that will turn wood to charcoal very efficiently. You'll be shown the important principles and how to operate the retort. You won't get nut-and-bolt instructions, because you'll probably have better ideas of your own depending on what kind of materials you can scavenge. The design is not critical and that means you can cut costs by using old barrels or drums, or even an old woodstove. This info is worth the price of the

ADVANCED PATTERNMAKING

reprinted by Lindsay Publications

Patternmaking is probably the most important step in producing high quality castings because minor changes in pattern and fillet shape can radically change the strength of a casting.

"Advanced Patternmaking" starts where "Patternmaking 1905" leaves off. You get dozens of examples demonstrating the techniques of skeleton patterns, green-sand and loam patterns for large pipe bends, patterns and core boxes for globe valves and three-way cocks. You'll see patterns for wheels and gears with four arms, web plates, and six or more arms. You'll see how a pattern for a shaft coupling is made.

Some of the more interesting examples you'll see are the patterns for steam engines: cylinder head and cover, disk crank, steam chest cover, Corliss engine valve gear and slide-valve engine cylinder.

You'll find a stop or throttle valve, special three-way cock, small bell, patterns and core boxes for casting chain, spur gear and rack,



Quality castings start with quality patterns!

teach you what you need to know.

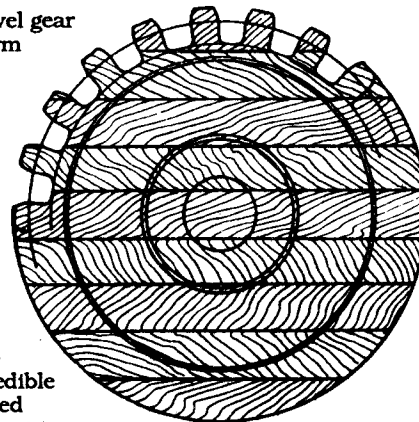
Learn about wood and its qualities, necessary wood working tools, basics of molding, con-

mitter and bevel gear patterns, worm and worm gears, and hollow arm flywheels.

Finally, the last section will show you such complicated things as patterns for screw propellers and incredible intricate carved patterns for cast iron parlor and cook stoves. Making stove patterns is an incredible skill, and this is the only place I've ever seen it taught.

Melting metal is one thing, but turning molten metal into something useful is another. This is a great book with great illustrations! Reasonable price! 5 1/2 x 8 1/2 paperback 144 pages Cat. no. 4090

\$8.95



Make your own charcoal & coke!

booklet alone.

Next, you get reprints from an 1895 encyclopedia detailing the process of making charcoal and coke. You'll learn which woods (and even sugar) produce what types of charcoal.

Pages from another book, published about 1905, will show you how coal was originally "coaked" in large piles much like charcoal, and later in bee-hive kilns. Detailed cross sections, operating diagrams, and test results will give you valuable information should you choose to develop your own coking process.

Valuable information at a low price. A must for foundrymen. Interesting reading. 5 1/2 x 8 1/2 23 pages.

Cat. No. 858

\$3.00

HOW TO MAKE MIRRORS

reprinted by Lindsay Publications

The Brashear, rochelle salt, and formaldehyde formulas are given, together with a detailed discussion of the precautions which should be taken to avoid danger and the

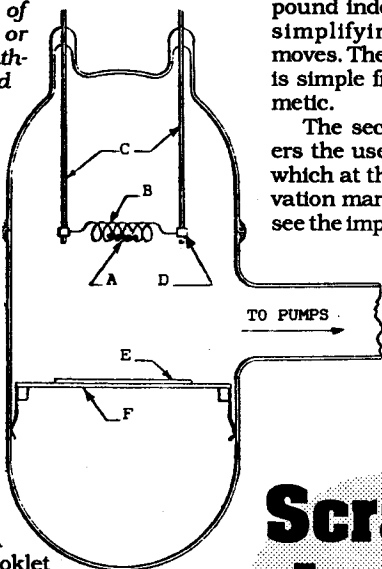
MIRRORS

technique which has been found to yield the most satisfactory results at the bureau. Methods are also given for the production of reflecting films on glass by the chemical deposition of copper, platinum, or lead sulphide, by cathode sputtering, and by the condensation of vaporized metals.

Be warned that should you mix some of the chemical too strong, there may be a dangerous explosion. But the manual goes into great detail about eliminating the dangers, and the practice of silvering. It is written for the beginner and leaves very little to the imagination. A reprint of a 1931 booklet issued by the Bureau of Standards. Excellent! 5 1/2 x 8 1/2 booklet. 15 pages 2 drawings.

Cat. No. 885

\$3.00

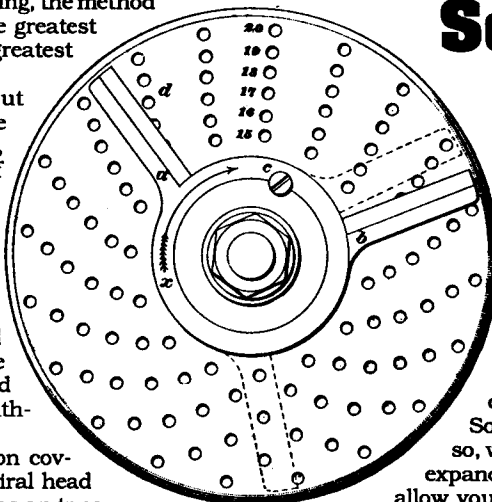


INDEXING

Most of this booklet, reprinted from a 1903 technical school textbook, covers indirect compound indexing, the method that will give you the greatest flexibility and the greatest number of options.

You'll learn about construction of the indexing mechanism, calculating runs of the index crank, selecting the index circle, using the sector, using index tables, calculating the moves for compound indexing, and simplifying the moves. The math used is simple fraction arithmetic.

The second section covers the use of the spiral head which at that time was an innovation marketed by Brown & Sharpe. You'll see the improvements in gearing, what effect rotating the index dial has, and you'll get an excellent explanation of the numerous indexing



tables provided.

A final section covers fractional indexing using two indexing plates and special spiral head. Three more pages of indexing tables are provided.

Some of the information should be quite useful to you.

Some will not, but even so, what you learn should expand your knowledge to

allow you to make more creative use of the dividing head you do have.

Loaded with valuable info! Reasonably priced! Get a copy today!

5 1/2 x 8 1/2 booklet 31 pages
Cat. no. 869 \$3.50

Scraping Lapping Grinding Balancing

OLD TIME MECHANICS

reprinted by Lindsay Publications

Back in the 1700's when you opened a machine shop, you didn't run out and buy a lathe and planer, you built them! Scraping was the skill necessary to produce absolutely flat and true beds and tightly fitting bearings. It was a skill that every mechanic learned, yet today few people have even heard of it.

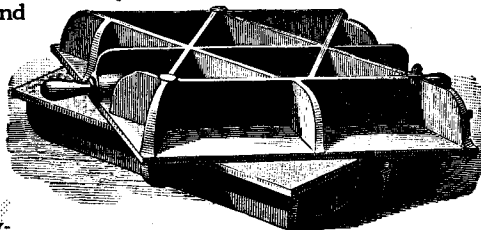
Scraping is used on the machines described in the Gingery series of books. Scraping is also the secret method used by Whitworth to produce large surface plates accurate to millionths of inch two centuries ago! It is a very valuable skill. The first half of this booklet deals with the surface plate and scraping.

Also reprinted are instructions for lapping, grinding valves and joints, making shrink fits and force fits, and for balancing pulleys, cutter-heads, and emery-wheels.

Get a copy! Learn about these old-time skills. This information is fast becoming lost technology. 5 1/2 x 8 1/2 booklet 15 pages

Cat. no. 855

\$2.00



Alternator Secrets!

ALTERNATOR SECRETS

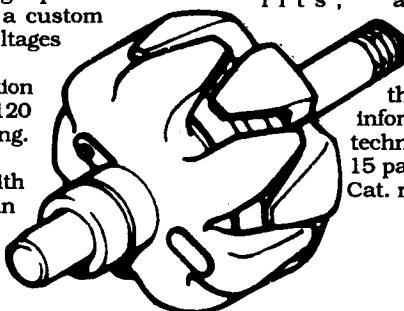
If you know the secrets of modification, you can get large amounts of power from a common auto alternator. You can build a portable powerplant driven by a gasoline engine to run brush-type power tools, lights, and AC-DC appliances at remote locations. You can hot-charge storage batteries, or even do light arc welding. Operation of the regulator is explained so that you can build a custom regulator, if needed, to provide regulated output voltages other than 12.

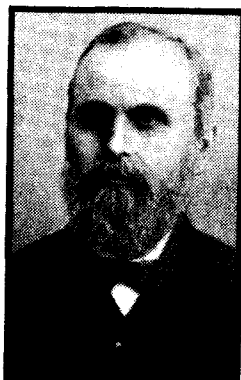
Learn how you can make almost any ordinary induction motor (like an old washing machine motor) put out 120 volts at 60 cycles without rewinding or internal rewiring. These secrets are worth the price of the booklet alone.

We've jammed a ton of information into 16 pages with small type to keep printing costs down so that we can keep the retail price the same as the old edition. Valuable, rare info! Get a copy. 5 1/2 x 8 1/2 booklet 16 pages

Cat. no. 80

\$3.00



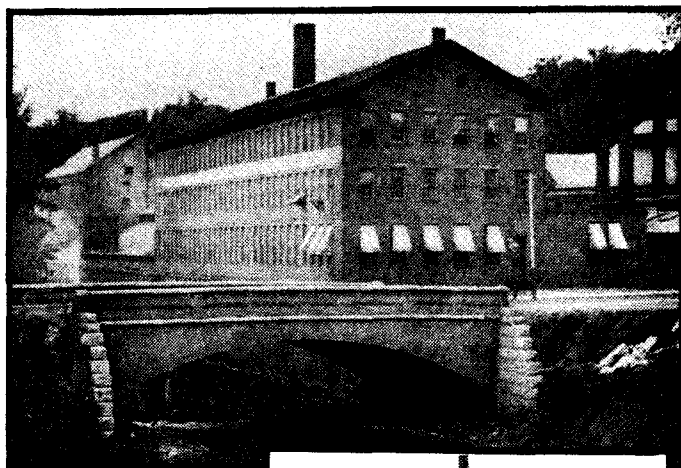


Mr. Pratt

Accuracy for Seventy Years
by Pratt & Whitney
reprinted by Lindsay Publications

In 1860 Francis Pratt and Amos Whitney worked in the Phoenix Iron Works during the day, but at night formed a company to build machinery. By 1930 the small company they founded had grown into a giant corporation known throughout the world for its sewing machines, typewriters, machine guns, grinders, lathes, milling machines, packaging machines, and on and on.

To celebrate their 70th anniversary the company published this small pictorial history of their company. Although in many ways this is just slick advertising of the era, you'll find that it's a fun way to go back and see the original workers, their



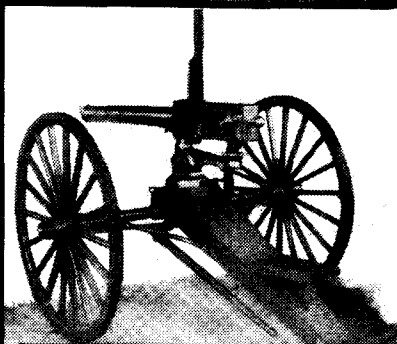
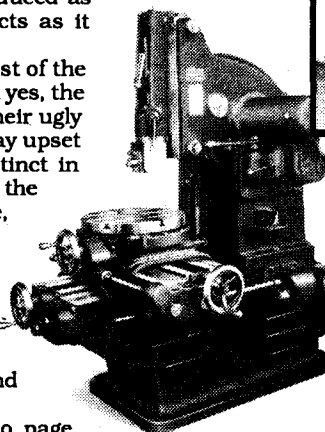
Mr. Whitney

Pratt & Whitney Their Company 1860-1930

factory, the early machines they produced as well as the factory and their products as it appeared in 1930.

Although you get early history, most of the book is composed of photographs. And yes, the big wheels of 1930, just HAD to see their ugly mugshots in the book as well. They may upset your stomach but the machinist instinct in you will appreciate the 1865 die sinker, the 1876 reciprocating hydraulic engine, the P&W interferometer that measured to the millionths of an inch, the bicycle wheel rim spoke drilling machine, the cigarette packaging machine, the Gardner machine gun, the pistol rifling machine, as well as the machine shops, foundry and much more.

You'll discover this a fun book to page through and imagine that you were there when the company was new. Fascinating book. Get a copy. I think you'll like it!
6x9 paperback 118 pages
Cat. no. 20870



\$8.95

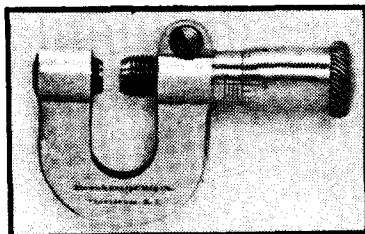
NEW!

They Invented Machine Tools!

**English & American
TOOL BUILDERS**
by Joseph Wickham Roe
reprinted by
Lindsay Publications Inc

Sure, you can use a lathe and milling machine. But did you build your own? Do you know who built the first such machine tools? You've probably heard of Mr. Pratt and Mr. Whitney. And Mr. Brown and Mr. Sharpe, and Mr. Colt. You've probably even read about Maudslay, Nasmyth, Brunel and Whitworth. But do you really know who they were, and the accomplishments that made them the top names in field of machine tool development?

The answers are here in this classic history of the men who invented and perfected machine tools. You'll read about and see the French lathes from the 1770's, Wilkinson's boring machine,



Samuel Bentham, Brunel and his shaper, Maudslay and his screw cutting machine. Discover a French screw cutting lathe from the 1500's!

Also covered are fascinating details of the careers and the inventions of Joseph Whitworth, Eli Whitney, Blanchard and his gun stocking lathe, Samuel Colt and his armory, Root's chucking lathe, Francis Pratt, Amos Whitney, Frederick Howe, James Hartness, and others.

This is a fascinating book that any machinist who takes pride in his knowledge and skill will want to read. If you're just a dummy who wants to beat a piece of metal with a hammer, then skip this. But if you're curious about how machine tools developed the way they did, then you must have a copy of this hard-to-find classic from 1916. It will cost you much less than what I had to pay to get an original.

Great reading. Entertaining. A creative machinist will probably pick up many ideas. For most of us it is just fun to dream about living in those times and hobnobbing with some of the most talented machinists that ever lived.

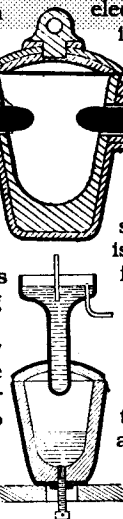
Get a copy. A must book for everyone who takes metalworking seriously. Fascinating reading. Top recommendation! 5 1/2 x 8 1/2 paperback 416 pages
Cat. no. 4732

\$16.95

Electric Arc Furnaces

Two short but excellent articles from turn-of-the-century mechanics magazines will show how to build an arc furnace with clay flower pots and carbon arc rods. Although they claim it is useful for melting aluminum, brass, and the like, I know there are some people using similar small furnaces to melt steel.

You run every risk in the book with these furnaces: fire, electrocution, poisonous gases, etc., but they can perform. You get many pages of reprints detailing the history and variety of electric furnaces showing their electrode arrangements and how they came to be. You also get a reprint on the Stassano furnace which is a large commercial furnace similar to the two amateur furnaces described. Fascinating reading. You'll have to make adaptations and be very safety conscious if you intend to build, but it sounds promising. 5 1/2 x 8 1/2 15 pages illustrated. Cat. No. 854 \$2.00

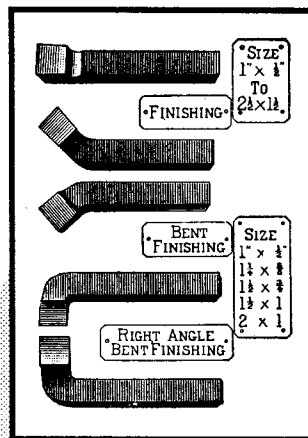


Tool Dressing

reprinted by Lindsay Publications
From a 1906 volume published by International Textbook Company comes *Tool Dressing*.

Discussion starts with the differences between high-carbon steel, alloys, blister, shear and crucible steel. Then you learn about the characteristics of the steel used in 1906 razors, saws, spindles, chisels and so on. Next, you make a wedge-shaped specimen piece and are shown how to harden it, and then draw the temper using color as a guide. This material is available in many other books.

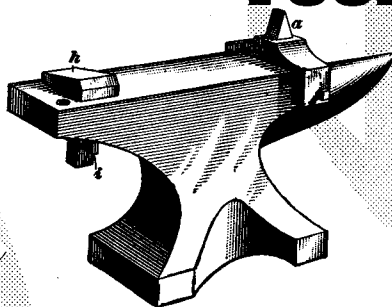
Of special interest in this publication are the instructions on forging, hardening and tempering a cold chisel, and then doing the same for a cape chisel and a 5 3/4" cross-peen hammer. You'll learn how to make a diamond-pointed lathe tool, a right-hand side lathe tool, and a boring tool. Next, you'll find instructions on making stone chisels, a



TOOL DRESSING

special hardie for stone drills, dressing stone drills, dressing marble turning tools, on making a flat spring, welding tool steel, making flat drills, and on hardening and tempering high-speed steel.

This is great reading for blacksmiths. Machinists who want to make their own lathe tools will find this valuable. Excellent illustrations and easy-to-read text. Low price! Get a copy. 5 1/2 x 8 1/2 booklet 36 pages. Cat. no. 20773 \$3.50



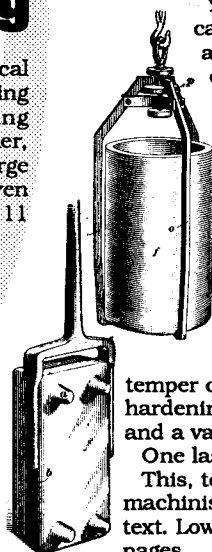
Treatment of Low-Carbon Steel

reprinted by Lindsay Publications
From a 1906 volume published by International Textbook Company comes this interesting discussion on handling common ol' steel.

You'll learn about the properties of low-carbon steel, see how it is made in Bessemer and open-hearth furnaces, the defects that can occur in ingots, how thermit is used to prevent "piping", what nickel steel is, and more. You'll learn about annealing low-carbon steel in a variety of furnaces and the effect of oil-tempering.

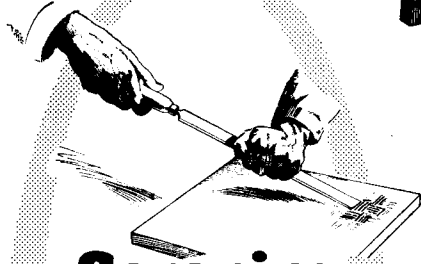
You'll find many sections on case-hardening: theory, packing materials, cyanide hardening to resist wear, hardening tools with potassium cyanide, and the case-hardening of small and large work. Discussed are soft spots, hard spots, use of old bone, packing to obtain colors, cooling work to obtain colors, producing temper colors on case-hardened work, and case-hardening equipment including boxes, cooling baths, and a variety of furnaces.

One last section briefly discusses bluing steel. This, too, is great reading for blacksmiths and machinists. Excellent illustrations and easy-to-read text. Low price! Get a copy. 5 1/2 x 8 1/2 booklet 37 pages. Cat. no. 20749 \$3.50



Scraping & Chipping

Notebook Volume 7
Chapters from a 1906 technical school textbook: hand scraping surfaces to truth, working metal with chisel & hammer, cutting keyways, cutting large flat surfaces, die sinking, even making bottle molds. 8 1/2 x 11 booklet 14 pages. Cat. no. 874 \$2.00



Treatment of Low-Carbon Steel



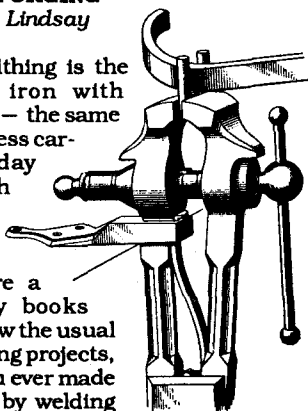
POUND IRON!

BLACKSMITH SHOP AND IRON FORGING

reprinted by Lindsay
Publications

Blacksmithing is the forging of iron with simple tools — the same forging process carried on today with enormous presses and dies.

There are a great many books that will show the usual blacksmithing projects, but have you ever made a bolt head by welding on a ring? Have you



made a rocker arm? How about a steam locomotive reverse shaft? Or a rudder frame?

Besides these rare topics, you get a complete discussion of blacksmith shop equipment: the forge, tuyeres, bellows, hood, chimney, fuels, anvil, all types of hammers, chisels, and all the rest.

The second part will teach you about the making of cast and wrought iron and basic operations of forging.

Blacksmith Shop & Iron Forging

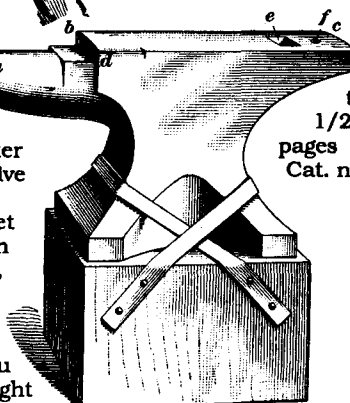
You'll make an eye hanger, gate hook, and other educational projects. You'll learn how to weld and make a small chain and tongs.

Although blacksmithing today is almost a fine art, it was once a basic machine shop skill needed in day-to-day operations. This 1906 technical school textbook will teach you both the basics and new tricks. Excellent

book! Great illustrations! Inexpensive! Order a copy today. 5 1/2 x 8 1/2 paperback 96

pages
Cat. no. 4074

\$6.50



Forge Practice

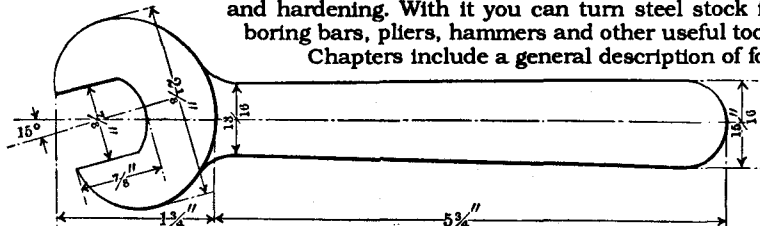
ELEMENTARY FORGE PRACTICE

by John L. Bacon

reprinted by Lindsay Publications

Forge practice is metal working at its most basic level: heating, shaping and hardening. With it you can turn steel stock into boring bars, pliers, hammers and other useful tools.

Chapters include a general description of forge



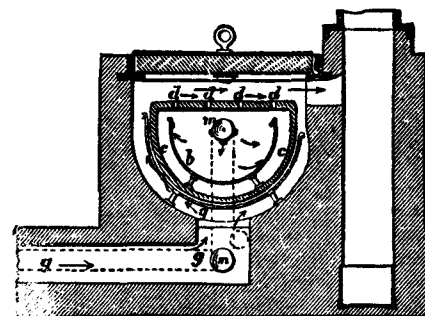
and tools, welding, calculation of stock for bent shapes, upsetting, drawing out, bending, simple forge work, calculation of stock and making general forgings, steamhammer work, duplicate work, metallurgy of iron and steel, tool-steel work, tool forging and tempering, and more. You get a number of tables and many pages of plans for useful learning projects: forge shovel, poker, C-clamp, bolt tongs, cold chisel, center punch, lathe cutting tools, scraper, hammers, and more.

You can make hammers, harden the faces, use a steam hammer with jigs and dies to make duplicate work, forge and grind lathe tools and much more. You learn skills that can save you money.

If you're new to forge practice and/or blacksmithing, order a copy of this. You'll like it. 5 1/2 x 8 1/2 paperback 288 pages

Cat no. 4457

\$9.95



Lubricants, Enamels & Feathers

MECHANICS NOTEBOOK 19

Lubricants, Enamels & Feathers

reprinted by Lindsay Publications

More from "The Techno-Chemical Receipt Book" (1886) by Brannet & Wahl. You get oldtime chemical formulas and instructions for electroplating copper and nickel, nickeling iron without electricity, platinizing metals, plating with cobalt, plating with aluminum, gilding copper, silvering telescope mirrors, tinning cast iron, coppering bath for wrought and castiron, simple fire plating for iron and more.

Put enamel on castiron and sheet metal. Unusual information! 5 1/2 x 8 1/2 booklet 15 pages

Cat. no. 847

\$2.00

FOUNDRY APPLIANCES

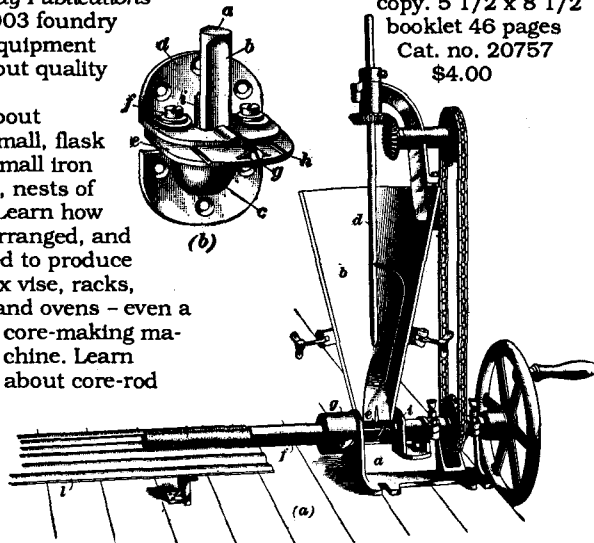
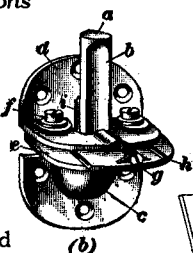
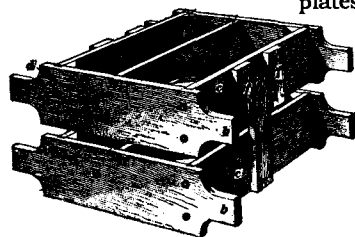


Foundry Appliances

reprinted by Lindsay Publications

Go back to a 1903 foundry and discover the equipment they used to turn out quality castings.

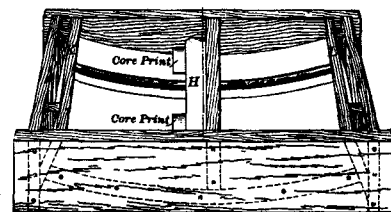
See and read about flasks, large and small, flask pins, cross-bars, small iron flasks, snap flasks, nests of flasks, and more. Learn how core-rooms were arranged, and the equipment used to produce cores: benches, box vise, racks, plates, and ovens - even a core-making machine. Learn about core-rod



straighteners, wire-cutters, and rosin grinders.

Learn about the machines used to clean castings: chipping hammers, emery grinders, steel brushes, gate saws, tumbling barrels, pickling solutions, sand blasting and cinder mills.

This is fascinating reading for anyone who enjoys pouring castings. You can borrow ideas from industrial equipment of 1903, both large and small, and use it in your own backyard foundry. If nothing else, it's a fascinating visit to an old-time foundry. Excellent illustrations and easy-to-read text. Low price! Get a copy. 5 1/2 x 8 1/2 booklet 46 pages Cat. no. 20757 \$4.00



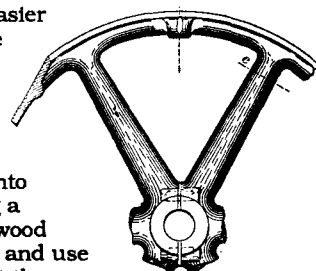
Machinery Pattern Making

Machinery Pattern Making

by P. S. Dingey
reprinted by Lindsay Publications

"Containing full size profiles of gear teeth and fine engravings on full-page plates, illustrating manner of constructing numerous and important patterns and core boxes"

It's easier to shape wood than metal. Put your efforts into building a quality wood pattern, and use it to cast the metal part you need for that special machine you're building. That's doing it the smart way. Besides, once you have the pattern, you can pour many castings relatively quickly. Who knows? Maybe you could even sell your extras to other machinists.



Metal Pattern Making

METAL PATTERN MAKING

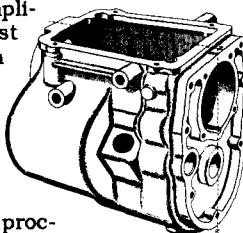
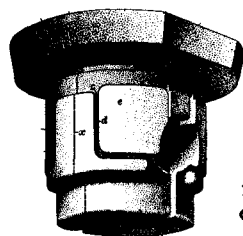
by Charles F. Fuller
reprinted by Lindsay Publications

If you intend to make numerous castings of a particular part, consider using a metal pattern. They are more durable than wooden patterns, and much easier and faster to produce if you need multiple copies of the pattern itself. You'll learn how to make the complicated patterns and coreboxes to mold and cast engine pistons, gear cases, pulleys, castiron stoves, a clevis, and much more. Everything is heavily illustrated, and the text is brief, detailed, and easy to read and understand.

You get lots of unusual information. Learn methods of gating thin patterns, patching blowholes in aluminum castings, molding processes, and more.

If you decide to have a commercial foundry pour several hundred castings for your model club or to sell, you'll need durable patterns that can be used on molding machines. This will be the book you need.

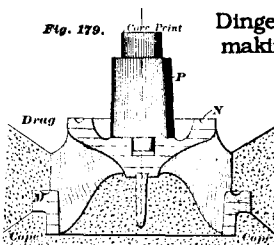
Metal Pattern Making is broken into three parts with 172 pages total, and wall-to-wall illustrations. If you're a foundry freak, you'll find it fun to read even if you never use any of it. An excellent book from 1928. Get a copy. 5 1/2 x 8 1/2 paperback 172 pages Cat. no. 20463



You get Dingey's secrets on making patterns for printing press cylinders, fly wheels, worm wheels, plug valves, propellers, Corliss engine cylinders and much more. And what is even better, you'll find 417 great engravings to show you how. This is a gem of a how-to book.

If you cast machine parts, get a copy of this. The text is good, but the illustrations are worth the price of the book alone. Make your engines look professional. Save yourself hours of needless machining. And make parts that would be very difficult to fabricate from weldments.

Excellent 1898 book. Order a copy! Recommended. 5x7 paperback 208 pages 417 engravings Cat. no. 20390 \$7.95



\$9.95

HARDENING, TEMPERING, ANNEALING AND FORGING OF STEEL

by Joseph V. Woodworth
reprinted by Lindsay Publications

One of the great advantages of steel is the machinist's ability to change its hardness simply by heating and cooling the steel in specific ways. You can make steel rock hard and brittle through hardening. You can soften it somewhat and make it less brittle by tempering. And if you want totally soft steel you can anneal it.

This 1907 third edition will show you industrial state of the art as it was then. It may be old, but the processes haven't changed. And when you see that this book is all how-to and practical recommendations together with great illustrations, you'll understand

CONTENTS

Steel - its selection and identification - steel for various purposes - the treatment of well-known brands of steel - the effects of heat

Annealing processes - the terms annealing, hardening and tempering defined - the annealing of malleable castings

The heating and cooling of steel - location of heating arrangements - the use of gas blast furnaces and heating machines - tough steel and hard steel - the difference

The hardening of steel - hardening in water, brine, oil and solutions - special processes for special steel

Tempering - by colors - in oil - on hot plates - by thermometer - in hot water - in the sand bath - by special methods

Case-hardening processes - the use of machinery steel for cutting tools and the treatment of it

Hardening and tempering milling cutters and similar tools

Hardening, tempering and straightening all kinds of small tools

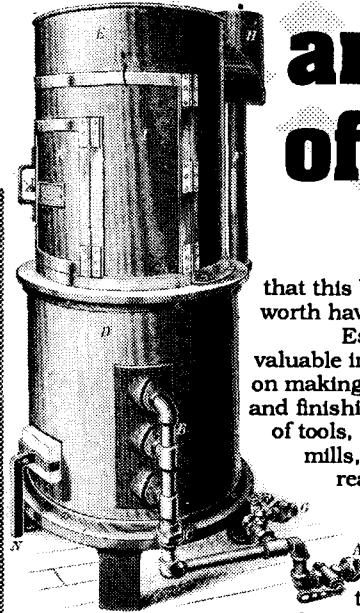
The hardening and tempering of dies and all kinds of press tools for the working of sheet metal

Forging and welding - How to accomplish satisfactory results in the forging and welding of steel and iron - drop forging

Miscellaneous methods, processes, kinks, pointers and tables for use in metal working

Grinding - the accurate and rapid grinding of tools and small machine parts - emery wheels - their use

Hardening, Tempering, Annealing and Forging of Steel



that this book is worth having.

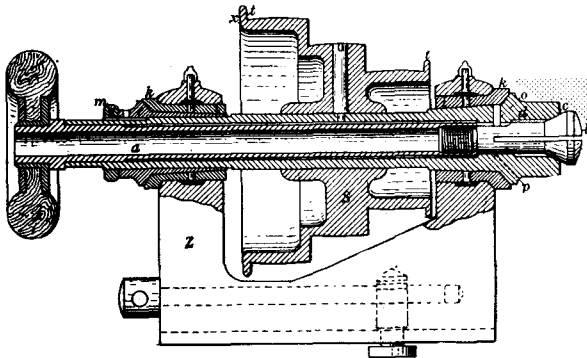
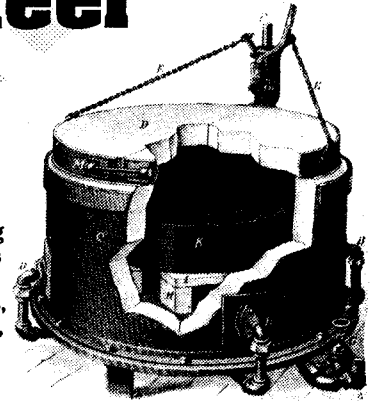
Especially valuable information on making, hardening and finishing all types of tools, including mills, drills, taps, reamers, dies, counter-sinks and more.

But be careful! This is old technology, and it can be very dangerous if you're not careful.

Get a copy of this helpful and useful book. Put one in your reference library. You'll have it when you need it instead of calling us someday and having us ship a copy by overnight courier at three times the price (if we still have it then). Order a copy today! 5 1/2 x 8 1/2 paperback 288 pages

Cat. no. 20498

\$9.95



WAYS AND MEANS

by A. H. Cleaves
reprinted by Lindsay Publications

You'll find this small 1892 book packed with ideas and practical how-to on a variety of subjects. Chapters include hardening and tempering small work, a cheap hardening and annealing furnace, hardening and annealing, mechanical appliances and method of various kinds, the modern bench lathe, chucks of different kinds, slide rests and bench lathe tools, a variety of ways and means, a variety of matter, and universal formula for gearing up any lathe to cut any thread.

Within each chapter are brief instructions usually with illustrations for hardening small

Ways and Means from 1892

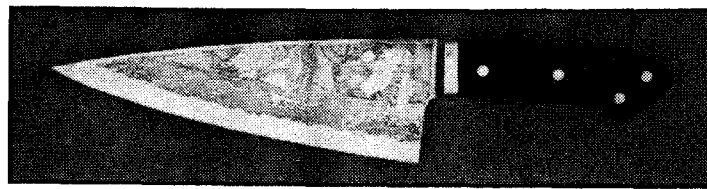
drills, making emery wheels, a yoke clamp, a delicate follower and a hundred other things. You'll learn about the Whitcomb lathe, the Ballou lathe, a watch lathe, lining up work on a planer, construction of planer fixtures, straightening work sprung in hardening, making a balance chuck, a V chuck, a ball turning tool, step chucks, construction of hardened chucks, and much more. Make a smoothing tool for a planer, a home made try square, a gas generator, and more.

You'll find that the descriptions are not extremely detailed and that drawings are not dimensioned. In other words, you're supposed to know a little something about building equipment before you tackle these projects. This is an idea book as much as it is how-to.

An interesting book. Lot's of interesting bits and pieces, odds & ends, sure to fire up your imagination. A fun book. Order a copy. You'll like it. 5 1/2 x 8 1/2 paperback 158 pages

Cat. no. 4759

\$7.95

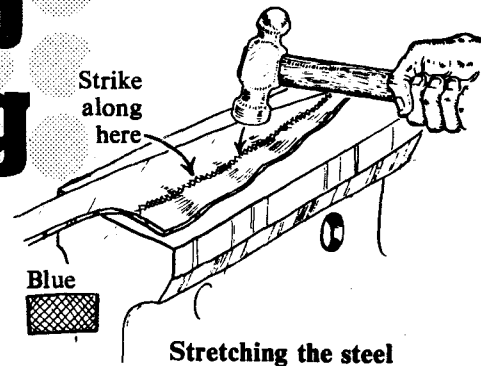


Step-by-Step Knifemaking

Step-by-Step Knifemaking
by David Boye

Here's another lost art! Learn about the tools you'll need - torches, grinders and sanders. Learn about the many types of knives, about cutting, grinding, and heat treating the blades. Learn how to make handles, sharpen, make sheaths, and acid etch intricate decorative designs into the steel. These knives are works of art that are almost too beautiful to use. You have to see this book to believe what is possible.

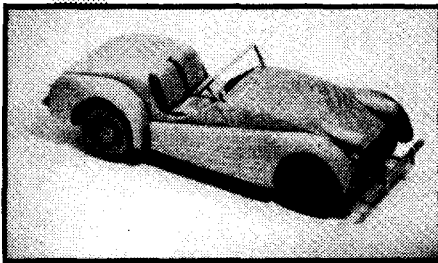
This is a classic text first published in 1977 and reprinted many times. It's loaded with detailed information on what is essentially an art form. You'll really like it. A goodie. Grab a copy! 7 1/2 x 9 paperback 270 pages heavily illustrated
Cat. no. 115 \$14.95



Ideas for the Foundry Buff!

Making Classic Cars in Wood
by Joe B Hicks

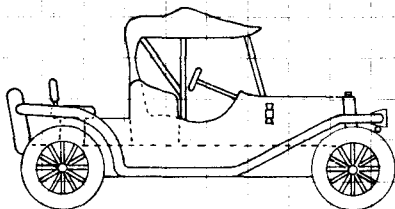
Build yourself a simple wooden model of a 1903 Fiat, a 1910 Cadillac, a Stutz Bearcat, a '57 Triumph, an '88 Lamborghini, a '65 Mustang or one of many others. The author will show you how to build hardwood models about eight to nine inches long. Obviously detail is not that extensive, but is still evident.



What I want you to do is to imagine this book to be a collection of wooden patterns that could be used to pour metal replicas. Once painted and detailed you could give them as gifts or perhaps sell them. Think of this as a project book for the foundry fanatic.

These are not patterns, however. You would probably have to make allowances for draft in ramming up sand molds. You probably would want to hollow the body so it wouldn't take as much metal to cast, and you might want to scale them larger or smaller. Nevertheless, this could be the starting point for some interesting castings. It will take some imagination and trial-and-error.

Make wooden cars. Make metal cars. Make 'em out of stale bread if you want. But do get started making them. Looks like fun. Try it. Get a copy today! 8 1/2 x 11 paperback 128 pages color illustrations
Cat. no. 486 \$10.95



Engraving Glass A Beginner's Guide
by Boyd Graham

You've seen amazingly beautiful designs in glass, I'm sure. Here, you can learn how it's done. You no longer do you have to be amazed. You can amaze others!

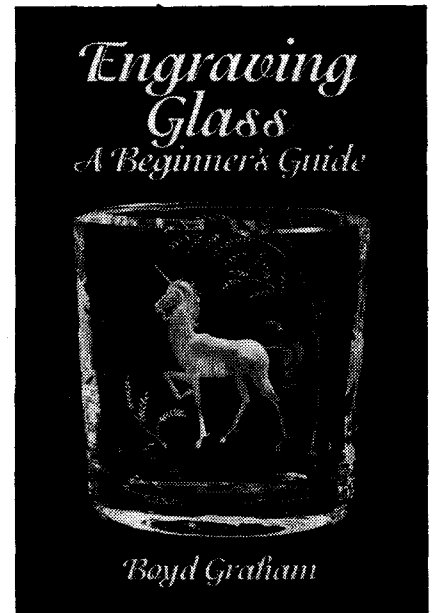
Chapters include engraving techniques and equipment, getting started, projects, choosing glass blanks and designs, vase engraving demonstration, other techniques and tools, displaying your work, as well as a list of materials and suppliers.

ENGRAVE GLASS!

Boyd Graham is a prize winning engraver, and when you see the work he does, you'll know why. You'll find over a hundred illustrations to help you learn quickly. And the copy on the back cover asserts that you'll discover that glass engraving is far easier than you might have imagined.

This book will fit right into your library. Before long you'll be able to melt sand into glass, blow a beautiful vase, and then engrave your girlfriend's face (or other parts of her anatomy) into it! While you're at it, engrave one for me, too!

Great little book on an unusual skill. Reasonably priced. Get a copy! 5 1/2 x 8 1/2 paperback 128 pages
Cat. no. 485 \$6.95



CHARCOAL FOUNDRY

by Dave Gingery

You can melt aluminum, pot metal, and even brass with a very simple furnace using grocery store charcoal as fuel in a very few minutes you can melt beer cans, your wife's pots and pans, the siding off your neighbor's house, the pistons out of your car, and anything else you can beg, borrow, or steal. It costs very little to build the equipment, and it works incredible well.

All you need is an old metal 5-gallon pail, about \$6 worth of fireclay, some sand, a junk auto heater fan with a coffee can shroud (or a vacuum cleaner), and this book to build a high temperature furnace. My brother built the furnace itself for about \$7. The blower, cords, a pipe for a crucible, and the rest cost a few dollars more, but I can't imagine that the

Melt Aluminum with Grocery Store Charcoal!

up the furnace. I went the crucible around which I placed about 75¢ worth of charcoal briquettes. Into the crucible went beverage cans, an old electric iron, and a couple of pistons. After skimming off the dross, I poured the 1400°F metal into the sand mold. About 20 minutes later, I had a face plate casting for a small lathe. Since then I've made lots more castings, and you can too.

This is the first book in

Gingery's series showing you how to build a complete metal working shop for almost nothing.

You must have the foundry setup in order to build the lathe, mill-

ing machine and other tools described in each of the other books. Castings make strong and precise machine tools. You'd go broke buying the castings (if they were available), but you can make them for almost nothing with this setup.

Building machine tools takes hours and hours, but building the charcoal foundry is far simpler, and loads of fun. You can make castings for any purpose. Anyone can build a furnace, and almost everyone will become hooked on melting metal once they try it.

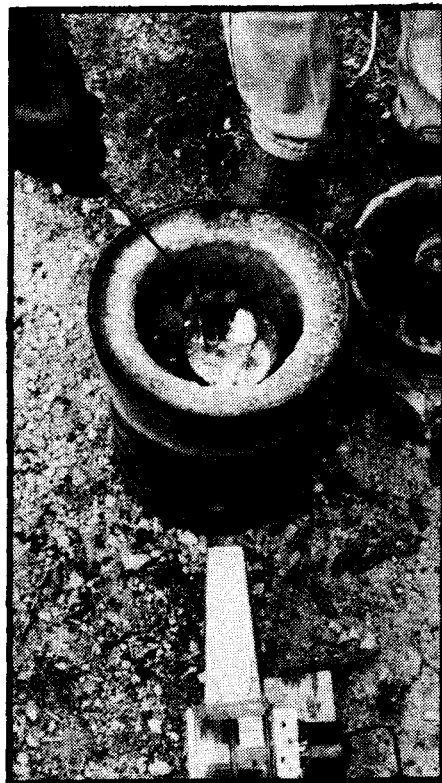
The "Charcoal Foundry" is a small book with big price tag, but it's worth every penny, and then some. Every page is loaded with practical how-to useful advice. This 1983 revised edition contains many, many drawings and many excellent photographs that will show you step-by-step how to build a foundry.

Highest recommendation! Top rate! Get a copy. 5 1/2 x 8 1/2 paperback 80 pages
Cat no. 163

\$6.95



(Use of pliers to hold crucible is dangerous and is NOT recommended!)



Melt Metal!

whole set up being more than \$25 - probably much less.

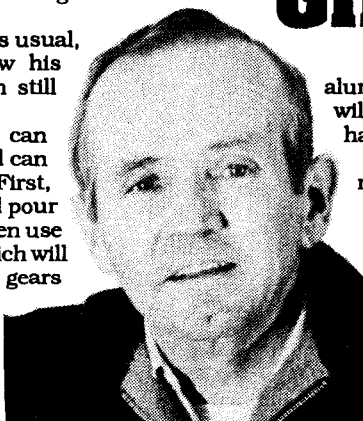
Some sandbox sand and fireclay will do very well for making sand castings. And all you need are some 1x4's and a few nails to build a cope and drag to make your molds. You wouldn't believe how easy it is to build a complete foundry.

After making a pattern (something that takes some skill), I rammed up a sand mold and fired

One day he asked me if I was interested in offering his series of books on building machine tools from scrap for practically nothing. They're written for the guy who'd love to buy a lathe but is broke - in other words, most of us. He told me he had been building lathes for more than 20 years!

I said I was interested, but as usual, a little skeptical. When I saw his books, I was amazed. And I'm still amazed.

Dave has proved that you can start with simple handtools and can build precision machine tools. First, you set up a simple foundry and pour castings to build a lathe. You then use the lathe to build the shaper which will cut the dovetails, T-slots, and gears for the milling machine. Next, you build the drill press. Finally, you can go back and build the accessories you need for your lathe and other tools: dividing head, screw-cutting gears, chucks, and lots more. A handy sheet metal brake is thrown in for good measure.



Meet Dave Gingery

Dave is a magician! Give this guy a file, your aluminum storm door, and some charcoal, and he will turn it into precision machine tools! And he has shown thousands of others how to do it too! As you build each machine, Dave teaches you new skills in foundry, mechanics, and machining. When you're done, you end up with a complete machine shop that you have built, you can use expertly, and you can repair should something go wrong. And best of all, you're a pretty darned good machinist.

I've never seen a series of books like this, and I don't think I ever will again. I may sound like a sideshow barker, but it's all true. Dave's books have become metal working classics. If you don't have a complete set yet, order those you're missing. Don't put it off.

BUILD A METAL LATHE

by Dave Gingery

Build a sturdy, precision metal cutting lathe for much less money than you'd pay for one of those "toy" lathes on the market. The only precision measuring equipment you need is a feeler gauge. You DON'T need tools. In fact, Dave built the original two prototypes for less than \$50 each!

Your lathe will have a 7" swing over the bed, about 5" over the saddle, with 12" between centers. You can bore the headstock spindle and tailstock to No. 1 Morse taper if you wish. You can scale it up but you'll need larger castings than the charcoal foundry can provide.

I had a chance to use one of the prototypes. After a pass across an 8" long steel bar, my micrometer showed a taper of less than .001". Not bad for a \$50 homemade lathe!

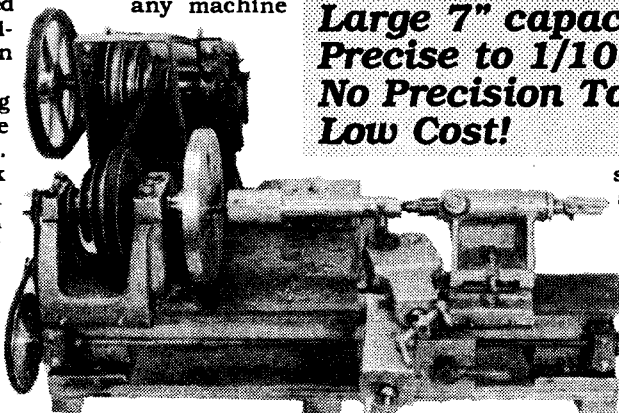
Castings from your charcoal foundry are the secret of building a quality lathe. The only tools you need are an electric drill, files, and other handtools along with a very simple homemade disc grinder fully described in the book. A table saw is very handy for making patterns, but not absolutely essential.

You will use this simple lathe to build the metal

Build a Metal Lathe!

**Large 7" capacity!
Precise to 1/1000"**

**No Precision Tools Needed!
Low Cost!**



shaper, milling machine, and drill press. You get no chuck or screwcutting gears. Dave will show you how to build them an much more in the book on deluxe accessories. They make life easy, but Dave will prove that

they're not absolutely essential.

Can't afford to buy a lathe? Then build one. It doesn't take much money, just lots of hours. And just think of the bragging you could do! Order a copy today! 5 1/2 x 8 1/2 paperback 128 pages heavily illustrated.

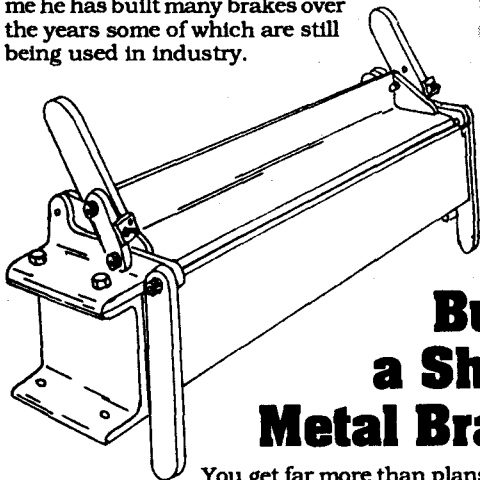
Cat no. 177

\$8.95

SHEET METAL BRAKE

by Dave Gingery

Build a brake and turn sheet metal into ducts, flashing for your house, boxes for tools and supplies — you name it. Dave told me he has built many brakes over the years some of which are still being used in industry.

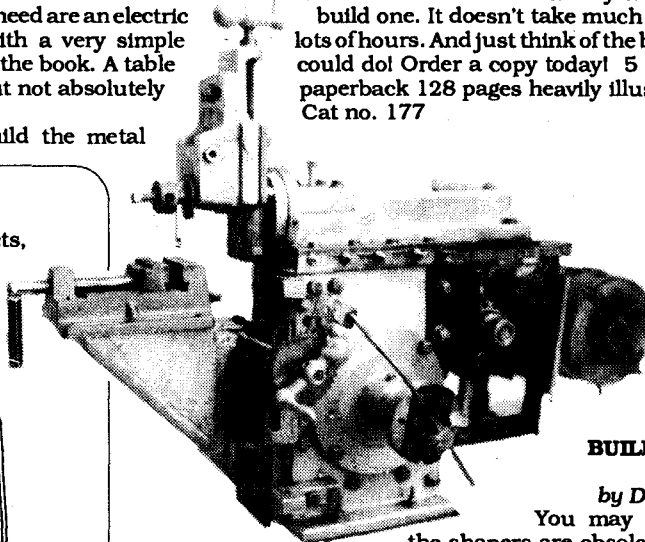


Build a Sheet Metal Brake

You get far more than plans. Inside this 52 page paperback you'll find drawings, parts lists, how-to, dimensions and everything you need to know about building a brake. You'll find the plans scaled for an 18" wide machine, but you will also learn how people have been scaled it up to much greater widths. Dave will even show you how to use the brake to make common joints and bends.

People have written to say "that's my kind of book." And they're right. Dave takes you by the hand and shows you construction step-by-step, pointing what is and is not important in the design of the brake. You don't often see good plans for a brake, let alone good ones. So order a copy! 52 pages 6 x 9 paperback Cat. No. 161

\$6.95



BUILD A METAL SHAPER

by Dave Gingery

You may have heard the shapers are obsolete. Tell that to someone who owns one!

Truth is, there is hardly a cheaper, quicker way to cut keyways, splines, gears, flat and angular surfaces, dovetail slides, irregular profiles and more. Most of this can be done on a milling machine, but often the milling machine must use an expensive cutter. A shaper, for instance, can use a 50¢ piece of tool steel to cut gears. Forget the expensive cutters.

You can build an excellent metal shaper with a 6" maximum stroke and a mean capacity of 5" by 5". The tool head

Build a Metal Shaper

rotates through 180 degrees for angular cuts, and features a graduated collar with a simple lock. The down feed has a graduated collar, and the exact stroke length can be set. Your shaper will have variable speed, automatic variable cross feed and adjustable stroke length. It will be a machine worth bragging about.

You get all the pattern plans, all the secrets, and all the details. You'll need the charcoal foundry and the metal lathe already built. Like Gingery's other books, this one is jam-packed how-to. Great book! Order a copy of this classic! 5 1/2 x 8 1/2 paperback 144 pages heavily illustrated

Cat. no. 187

\$8.95

**Rigid!
Powerful!
Far better
than "toy"
milling
machines!
And
YOU build
it!**

MILLING MACHINE

by Dave Gingery

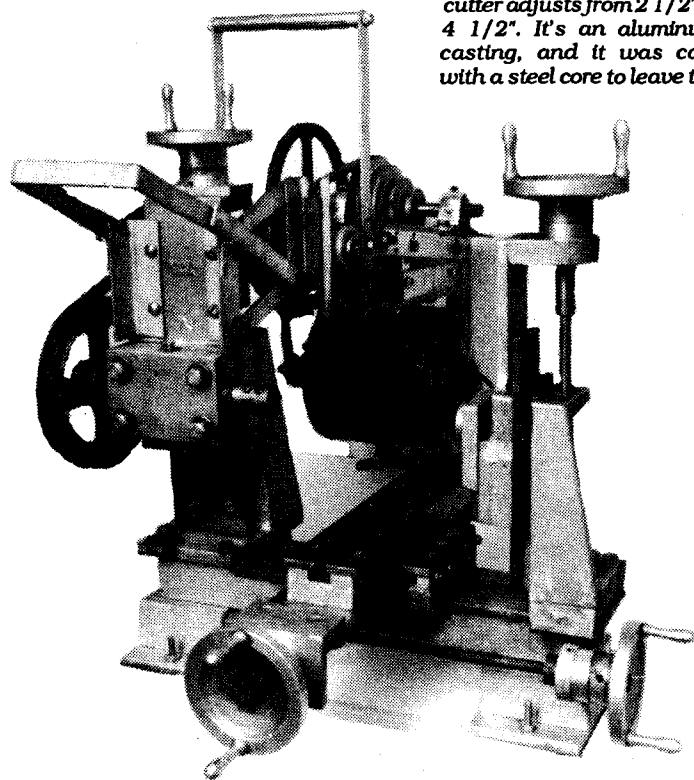
Dave can tell the story best:

"It's a horizontal miller, but it has the full range of vertical mill capability when used with the angle plate on the work table. Home shops will find a horizontal mill and a shaper to be not so nearly obsolete as the "experts" say, and even the smallest shop would soon outgrow one of those little toy vertical mills.

The work table 2 3/8" x 12" with a 3/8" T-slot, and it travels a full 12". The carriage travels 6 1/2" with the tail stand in use, and 8 1/2" with it cleared away.

It took over a month to design the transmission, and it works beautifully! Eight speeds ranging from 43 rpm to over 2430 rpm. I know of no other small miller except the Dore-Westbury that has such a range. . . The highest speed in the low range is 270 rpm, and it made a .035" cut in the end of the compound with the face mill set at a 3" diameter at that speed with no squawk or chatter.

I made the cutter on the lathe, but the miller is designed to make its own cutters for nearly every purpose. This cutter adjusts from 2 1/2" to 4 1/2". It's an aluminum casting, and it was cast with a steel core to leave the



Build a Milling Machine!

slot for the cutter bit. It shows no sign of failure after planing off the end of the compound. The set screws didn't loosen, and the casting wasn't strained in the least amount.

That's after several passes over a sandwich of 1/4" steel top and bottom, and an inch of aluminum between.

Anything is possible. It can make jigs or fixtures that are needed for any kind of work. It can make any type of style of cutter. You could even machine a blank or a Brown & Sharpe gear cutter, mill the lands, and grind the cutter right on the miller.

I'm really excited about this machine. It's much more than I thought possible when I began."

Build yourself a milling machine! Order a copy of this. It's worth twice the price. 5 1/2 x 8 1/2 paperback 160 pages

No. 1128

\$8.95

THE DRILL PRESS

by Dave Gingery

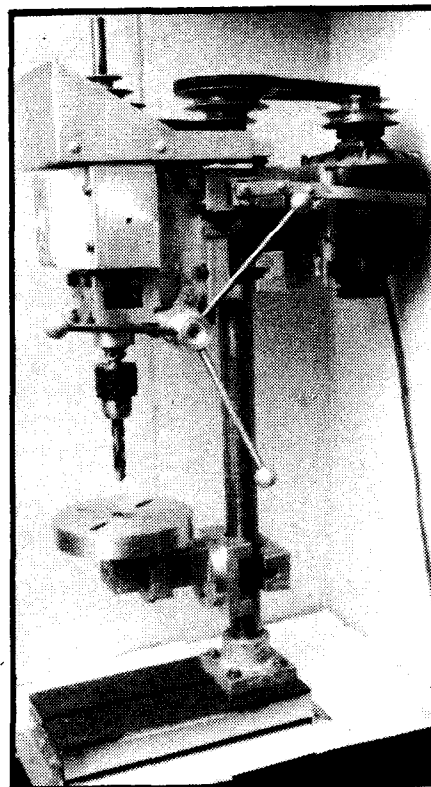
Build a professional quality drill press! It's a beauty! Dave describes it:

"I can't believe the capability of this machine. I put a 5/8" bit in the chuck, and it drilled through a 1/4" steel channel without a pilot hole. My wife said it looked like it was cutting cheese instead of steel.

Note the double reduction that gives a low speed of 260 rpm. That's why it can drill large holes in steel. I'm certain it can drill a 3/4"

Build A Drill Press!

**Powerful, Precise, Inexpensive!
Anyone can buy one,
but YOU can build one!**



hole, and it may be capable of drilling up to a 1" in steel. I don't have a larger bit to test. All of the small drill presses that I've seen have a low speed around 700 rpm. That means they only have a capacity of 3/8" in steel, even if they do have 1/2" chuck.

The spindle is mounted in ball bearings, and so is the countershaft for the double reduction. The driven pulley is mounted on a hollow shaft, supported by its own 1" ball bearings to run concentric with the spindle. No belt tension is transferred to the spindle.

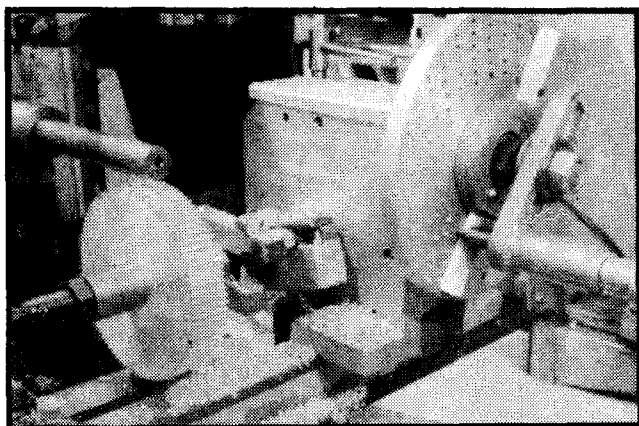
The quill feed is 2 1/2", and it can be made longer. The quill is advanced by

a unique cable winch mechanism. This is only a 1/16" cable, though it had ample strength to feed the 5/8" bit to produce a closely curled chip. It has provisions to adjust tension and backlash, which is very important for sensitive drilling with small bits at high speed.

The machine in the manual is a 12". It can easily be scaled down about 1/3 or smaller, and it can be scaled up to a hefty floor model with ease. None of the castings used the full one quart charcoal foundry capacity, and all of them were machined on the homemade lathe. Only the spline on the spindle was done on the miller."

Sure, you can buy a drill press. But you'll pay an arm and a leg for one that can match this performance. It's worth the effort. Order a copy of this and get started. Great book! 5 1/2 x 8 1/2 paperback 128 pages illustrated Cat. no. 1133

\$8.95



DIVIDING HEAD & DELUXE ACCESSORIES

by *Dave Gingery*

Now that you've built the lathe, shaper, milling machine, and the drill press at almost zero cost, it's time to build the fancy accessories.

Chapter one covers "Tooling Up." You get a list of supply sources and helpful books, a review of basic tooling, and a series of simple lathes tools: compact clamp dog, heavy face plate, homemade hand reamers, a set screw chucks, expanding and threaded mandrels for facing gear blanks and for cutting teeth, plus a simple fixture for tapping truly perpendicular holes by hand.

The second chapter will show you how to build a simple two-jaw chuck that can be self-centering for repetitive work and a four jaw chuck with independent reversible jaws. Like Dave says, "You'll be glad you didn't blow your bait and beer money on a chuck when you see how easy it is to build one."

Next, you'll build a steady rest. This almost-essential accessory expands the capacity of the lathe for work that is too long to be mounted between centers. It's worth many times its small cost.

Then, you'll build the dividing head that serves as a rotary table, too. Few home shops have such an accessory, but you will. This beauty is built around a standard 40 tooth worm gear, providing all divisions through 50 and all even and multiples of 5 through 100. Many other divisions up to 1960 are possible, and it's easy to make a special plate for an unusual job. You'll be shown how it works, why it's so accurate, and how to build it and use it. The directions for drilling the fraction plates are especially valuable because they can be adapted to

Build Deluxe Machine Shop Accessories!

**Indexing Head • Face Plate
Steady Rest • Change Gears
Mandrels • Chucks • More!**

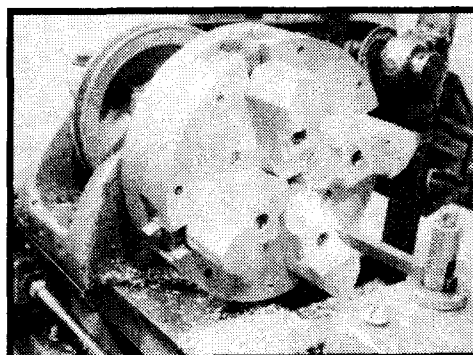
building a variety of other indexing fixtures.

Next, you'll cut professional quality change gears to add screwcutting capability to your homemade lathe. It's easy to machine the blanks to correct size and mill the tooth spaces. Dave will show you how to make gear cutters for about 50¢ each!

Finally, you'll be shown how to install these gears. A conventional tumbler plate provides left hand thread cutting, while the basic set of gears cuts all threads of standard inch sizes from 8 to 80 tpi. A fine feed range from .0025" per revolution to .005" is also provided. You even get a threading indicator for the carriage so that you can engage the split nut at the proper moment. It really is easy to add change gears once you how, and Dave will show you everything you need to know.

This book is worth many times its price. You don't believe me? Have you priced a rotary table? An indexing head? Even the sim-

ple s t
gears?
Incredible
quality!
Rare how-
to Order
a copy today.
5 1/2 x 8 1/
2 paper-
back 159
pages
Cat no.
1153
\$8.95



"Build Your Own Metalworking Shop from Scrap"

All seven books:
*Charcoal Foundry,
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Shaper, Drill Press,
Milling Machine,
Deluxe Accessories
and Sheet Metal
Brake!*

Save \$5.90

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\$52.75



Build a FORGE

How to BUILD A FORGE

by *David Wimberley*

Let Dave Wimberley show you how to convert a standard water heater shell and old vacuum cleaner into a quality blacksmithing forge for very little money. This 20" diameter firebrick-lined design requires no welding and has a hood that with careful installation will allow you to operate the forge indoors without asphyxiating yourself.

Dave will show you how to use standard plumbing fixtures to pump in the air blast. He'll show you how to line the steel basin with firebrick and how to lay out the conical hood. He'll even show you how to make a refractory fire cover that makes the forge safer and more convenient to use. The only special tool you'll need is an abrasive cutoff blade for your power circular saw.

Here's an excellent proven design presented in an easy-to-understand fashion with excellent drawings and photographs. Set up a blacksmith shop and pound iron! Excellent plans! Order a copy today! 5 1/2 x 8 1/2 booklet 15 pages

Cat. no. 845 \$4.50

How to Design & Build CENTRIFUGAL FANS

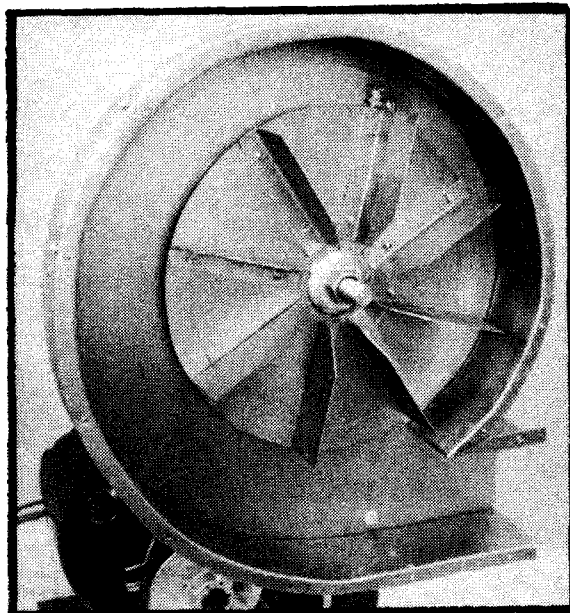
by Dave Gingery

"Centrifugal fans? Why on earth would I want to build a centrifugal fan? Used ones are all over the place. I can get 'em for almost nothing!"

Think again. Sure there are fans all over the place, but rarely will they do what you want them to. And that's the truth.

If you're building a small furnace to melt aluminum, you can use a salvaged fan. If you're going to build a brass or cast iron foundry, you'll probably need more pressure than a salvaged fan can provide. If you're going to build a dust collection system for woodworking tools, a welding booth, or a grinding wheel, you'll find that the blowers you need are not available at low cost.

Dave will show you how to design a fan with simple math that will provide the volume and pressure you need for the system you're building. With a pocket calculator you can calculate the dimensions of the fan, the size of motor needed to drive it, and predict performance.



**Learn to layout
sheet metal transition
pieces!**

**Build exactly the
blower you need
for your foundry
furnace!**

Design & Build CENTRIFUGAL FANS!

**Build a vacuum
system to
remove dust and
dangerous fumes
from your shop!**

Then you'll be shown how to use pillow blocks, shafting, plywood, sheet metal and other common materials to build a dirt cheap blower that outperforms any make-do blower you might find on the surplus market. And it should, because you designed it to your needs.

Dave will also show you how to build a simple manometer and pitot tube. You can actually measure performance and fine tune your air system. Dave used this equipment to build and adjust a powerful gas burner for his iron-melting furnace now under development.

Learn how to build a dust precipitating cyclone, design sheet metal transition pieces (a very valuable skill), balance a dust collection system, build a static balancing stand, and more.

If you have read any Gingery books, you know what you're getting: top quality. You should have a copy for reference. This brand of simplified do-it-yourself knowledge is not available anywhere else. Recommended. 5 1/2 x 8 1/2 paperback 112 pages
Cat. no. 4600

\$9.95

Thermit Welding

THERMIT Welding Process

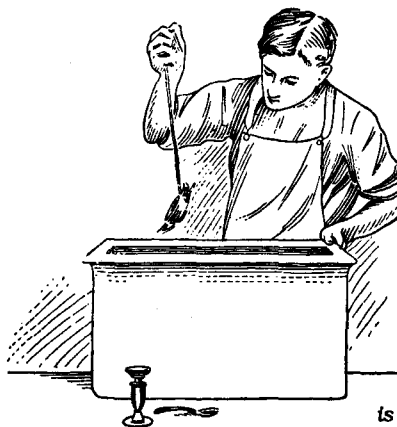
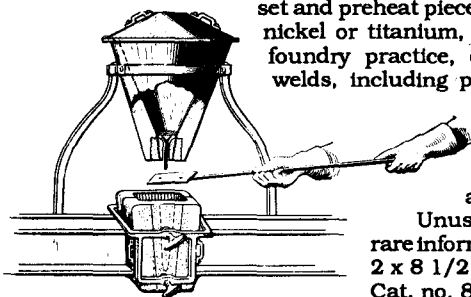
by Richard N. Hart

reprinted by Lindsay Publications

Thermit! What an incredible process! Take a mixture of powdered aluminum and iron oxide, ignite it, and stand back! Within seconds the mixture flames to twice the temperature of molten steel, and from the bottom of the special crucible comes molten iron. In 1914 Thermit was a cheap and simple way to weld railroad track, axles, and even broken motor shafts.

Learn about the invention of Thermit process, welding rail, special crucible and rail molds, butt welding of pipes, broken locomotive frames, and much more. You get detailed information on the chemistry involved, how to set and preheat pieces, how and why to add nickel or titanium, the use of Thermit in foundry practice, examples of practical welds, including photos of repairs on a torpedo boat rudder, a locomotive frame, even a steamboat paddlewheel axle!

Unusual process! Loads of rare information! Get a copy! 5 1/2 x 8 1/2 booklet 40 pages
Cat. no. 899 \$4.25



ELECTROPLATING

by Henry C. Reetz

reprinted by Lindsay Publications Inc

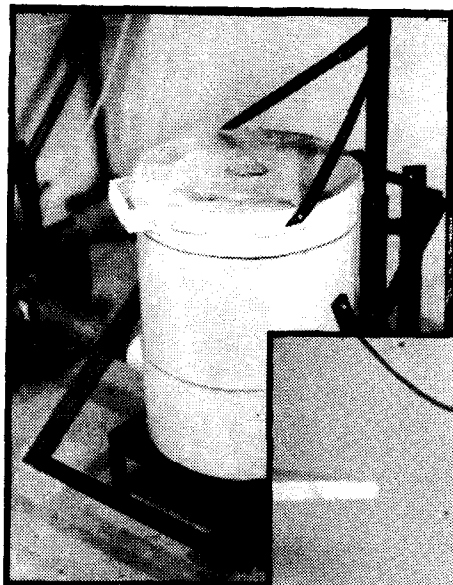
Try electroplating! It's a useful addition to your shop skills. Here's a simple, inexpensive, well-illustrated little book that will show you exactly what you need to know to get started.

Originally published by Popular Mechanics magazine in 1911, Electroplating is brief, easy-to-read, and useful. You can be sure about that. About the only information that is really dated concerns power supplies.

Chapters include introduction, electrical equipment, shop equipment, cleaning goods before plating, copperplating, nickelplating, silverplating, goldplating, miscellaneous, first aid, and business suggestions.

You'll learn how to clean parts, polish them, mix up solutions, make tanks, and all the essentials to get going. This could very well be an easy way to try plating. If you enjoy it, then you can launch into "heavier" texts loaded with chemistry and industrial secrets.

A great little book. Worth having. Order a copy. 5 1/2 x 8 1/2 paperback 99 pages
Cat. no 20080 \$6.95



Melt Cast Iron in a Crucible Furnace!

*Fast safe melts with
gas fired furnace!
Easy to build!*



Building a Gas Fired CRUCIBLE FURNACE

by Dave Gingery

Dave says beginners should "cut their teeth" melting and casting aluminum before trying "hot stuff." An excellent simple, low-cost furnace for this is the charcoal furnace described in one of Dave's earlier books.

Once experienced, you'll want to pour larger quantities of aluminum than the charcoal foundry can provide, alloys with higher melting points such as brass, and eventually cast iron. You'll also want to use a more convenient and lower-cost fuel. The gas-fired crucible furnace is exactly what you need.

Here you can melt up to 20 pounds of cast iron in a crucible. When the melt is ready to pour, both the top and body of furnace raise up so that you can grasp the white hot crucible from the sides making the crucible easier and safer to control than if you had to use tongs to lift the crucible straight up as is done with other furnaces.

Although charcoal is widely available, it is messy and somewhat expensive. Gas is low-cost and clean, but requires a more complicated burner. Dave will show you all the tricks, including how to build the centrifugal blower, so that you get a hot, efficient and quiet gas burner.

You get wall-to-wall how-to — the detailed information that Dave is famous for. Six chapters cover basic design, building the furnace body, building the frame, building the burner, crucible and tongs, and operating the furnace. You get photographs, drawings and proven techniques.

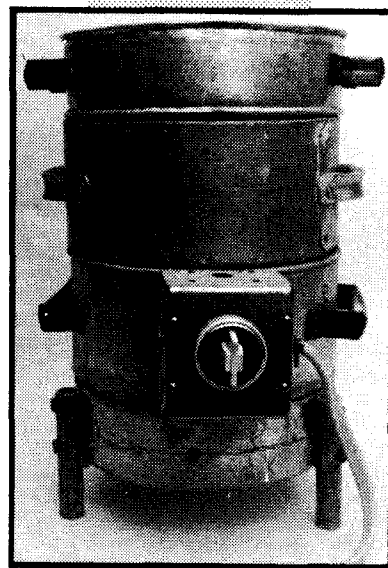
You get the standard Gingery quality. Full tilt! Complete! Detailed! Excellent! You can pour your own cast iron castings, quickly and safely adding a whole new dimension to your machine shop. Get a copy of this. Highest recommendation! 5 1/2 x 8 1/2 softcover 108 pages
Cat. no. 1281

\$9.95

"LIL BERTHA" Electric Furnace

by Dave Gingery

Let Dave show you how to melt aluminum and brass with electricity! If you have good ventilation and are careful, you can melt indoors, rain or shine. Electricity isn't cheap, but it's no more expensive than charcoal, and it's right there in the wall — all you need. Best of all, you can dial up the heat you need on thermostat, put the metal in the crucible, and go ram up your molds. After the metal melts, it will sit there at pouring temperature until you're ready. The furnace will practically watch itself.



Gingery's Electric Furnace

You can build this high performance electric furnace that runs at 1800° practically forever for very little money. And it's surprisingly easy.

Not only that, you can use Lil' Bertha to calcine investment molds, carburize and heat treat metal, forge, temper, anneal, enamel, fire ceramics, and many other tasks. If you go to the trouble of getting the harder-to-find high temperature electric element, you can fire at 2300° for extended periods, making this furnace ideal for melting brass!

Dave will show you how to size the furnace to fit your needs, where to get and how to handle crucibles, make the electrical calculations, and more. This is typical Gingery material — top rate wall-to-wall how-to. Order a copy. 5 1/2 x 8 1/2 paperback 67 pages.

Cat. No. 4163

\$7.95

Build Dave Gingery's STIRLING CYCLE ENGINE

Build a Two Cylinder STIRLING CYCLE ENGINE by Dave Gingery

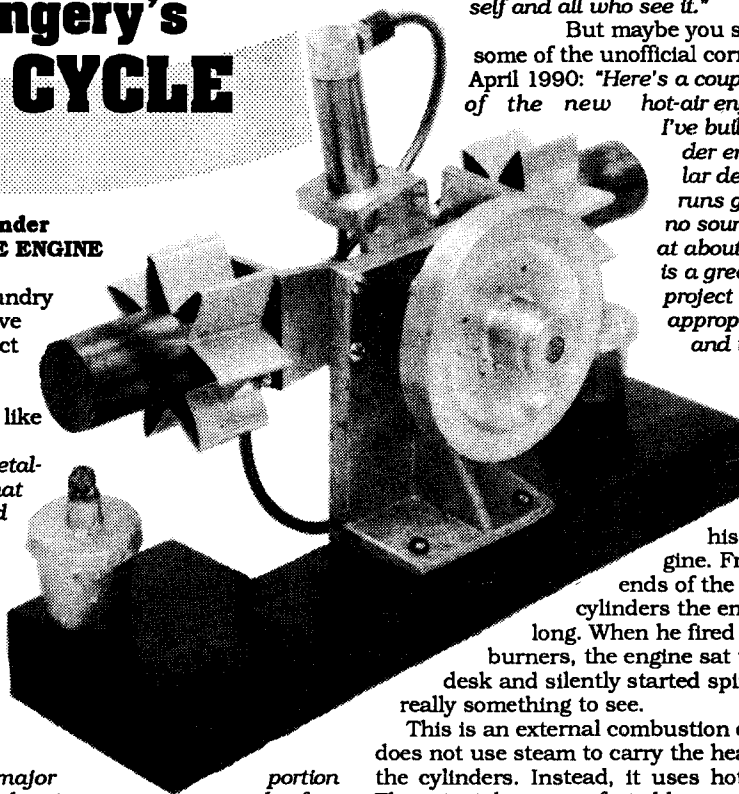
Fire up the foundry and the lathe! Dave has a super project for you!

Dave's official description reads like this:

"There is no metal-working project that will build skill and confidence better than a running engine project. So here's an engine project that you can build with basic equipment and limited skill and experience...."

Aluminum castings are a major portion made of and the remainder is common water pipe, drill rod, brass rod and ordinary hardware, fittings and sheet metal. A small lathe fitted with face-plate, chucks and ordinary tooling will do the work.

You will greatly expand your skill and you will end up with a mechanical marvel to amaze your-



self and all who see it."

But maybe you should hear some of the unofficial correspondence. April 1990: "Here's a couple of sketches of the new hot-air engine project..."

I've built a single cylinder engine of a similar design and it runs great. Practically no sound or vibration at about 1200 rpm... It is a great training project that should be appropriate for second and third year shop students...."

During the summer of 1990 Dave stopped by and fired up

his prototype engine. From the outside ends of the opposing cylinders the engine is 11 1/2" long. When he fired up the alcohol burners, the engine sat there on my desk and silently started spinning. It was really something to see.

This is an external combustion engine but it does not use steam to carry the heat energy into the cylinders. Instead, it uses hot air. The principle was perfected by Rev. Robert Stirling in the 1800's. John Ericsson, the Swedish-born engineer who designed the Monitor, contributed substantial improvements to the engine.

Dave writes: *"This is a free-style design with no practical application except as a demonstration engine. However, it is not a toy engine, and the builder will gain some valuable additions to his tooling as well as acquire new skills..."*

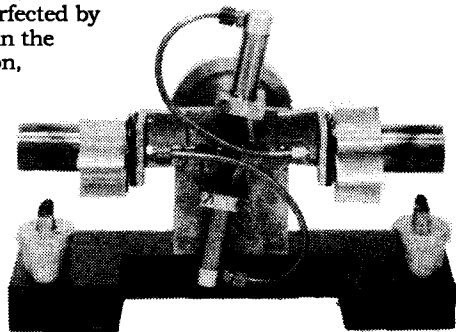
This is the usual full-tilt Dave Gingery manual with all necessary illustrations and step-by-step how-to that has made his name a famous one among machine shop enthusiasts. You get history, theory, drawings, photos, the whole thing.

Dave writes *"I've killed a disgusting number of hours watching it run."*

Another Gingery book! Need I say more? If you're into working metal, get a copy of this book or a straightjacket. If you don't order this book, you're obviously losing your mind, and you're gonna need the jacket!

Great book. A "must have!" Order a copy today! 8 1/2 x 11 paperback 76 pages
Cat. no. 1302

\$9.95



HIT & MISS ENGINE PLANS!

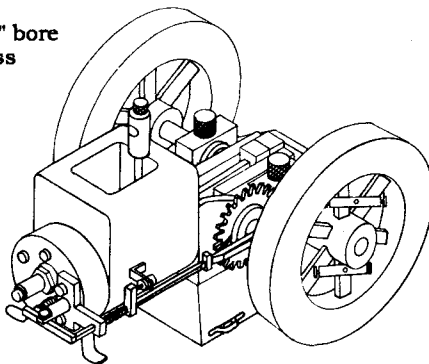
by Harold Depenbusch

When I picked up the phone, Dave Gingery started telling me how I should offer these plans, that they were some of the best he had seen. After I saw a copy of the plans booklet, I agreed. They're good.

You can build a 1 1/8" bore x 1 1/2" stroke hit-or-miss engine complete with waterjacket, governor, flywheels and everything else without the use of castings. In this booklet you get typewritten how-to in the first half with all the construction drawings in the back. You'll learn how to make the base, the cylinder, oiler, water jacket, flywheels, crankshaft, main bearings, heads, valves, con rod, rings, cam, governor parts and all the rest.

Again, these plans are excellent. The book format is not all that professional, but the info Depenbusch delivers sure is. If you like to build models, I highly recommend this! 8 1/2 x 11 stapled booklet about 40 pages.

Cat. no. 1252 \$15.95



Build a Hit & Miss Engine

TAN YOUR HIDE!
Home Tanning Leathers & Furs
 by Phyllis Hobson

Learn what you need to tan your own leather and fur, and all the steps involved in doing it right. If you hunt or raise animals for meat, you can convert the hides into beautiful leather. Once you do, you can use the special section in the back of this book to get started making mittens, fur hats, leather vests, holsters, belts, knife sheaths and more.

Tan Hides! Make Leather



You'll find that tanning leather is very inexpensive, but is labor intensive — a lot of work. But that's part of the fun. How many people do you know tan their own leather?

The authors will tell you what tools and chemicals you'll need, how to select the hide, the steps for tanning leather and fur, how to test for tanning, old-time Indian tanning methods, how to make your own dyes, what qualities of leather to look for, which tools you need for leatherworking, basic leatherworking techniques, where to find tools and supplies and more.

This is a classic book first published in 1977 and is now in its 17th printing! Excellent book. Also useful for keeping your mother-in-law in line. Next time she hassles you, threaten to tan her hide. Show her this book, and she'll know you mean it! Get a copy! 5 1/2 x 8 1/2 paperback 135 pages
 Cat. no. 62

\$6.95

POTPOURRI COLOGNE & SOAPS
102 Natural Recipes
 by David A Webb

Try something different. Make soap that not only gets you clean, but makes you smell better, too! (And your friends have told me repeatedly that you NEED to smell better!) Discussed in detail are

- easy ways to dry flowers for winter bouquets and potpourris
- common and botanical names of plants used
- potpourris including recipes that use familiar English standard measurements and readily available ingredients
- sachets including recipes, choice of cloths, and suggested uses
- soaps from essential ingredients to safety precautions
- candles including tips on making decorative scented candles
- room fresheners and deodorants
- perfumes and colognes including personalized fragrances



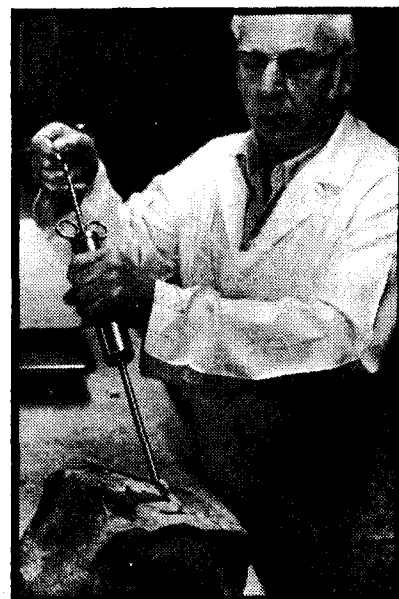
Wash Up! Stop Stinking!

• containers, dishes and other packaging
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 You can make these interesting products for your own use or for resale. The book covers a lot of ground and is guaranteed to give you plenty of ideas. Consider it. 7x9 paperback 165 pages
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THE CANNING, FREEZING, CURING & SMOKING OF MEAT, FISH & GAME
 by Wilbur F. Eastman Jr

Here's a great reference book that will allow you to preserve meat for the future. You get a mixture of plans, tips, how-to instructions, and recipes for preserving all types of meat with all types of processes.

Chapters include Basic Information, Canning, Freezing, Curing, How to Build a Smokehouse, Beef and Veal, Pork, Lamb, Poultry, Game, Fish, and Recipes.



Preserve Your Meat!

You'll learn to process meat inexpensively and safely. If you hunt, fish, or raise livestock, you can use the techniques of early settlers and explorers who had no refrigerators.

No, I didn't seen anything on pickling those pesky alligators that live in New York sewers. Or was it the Chicago sewers? But I did see tips on just about everything else. A classic book first released in 1975 and updated in 1989. Excellent book. Get a copy. 5 1/2 x 8 1/2 paperback 202 pages
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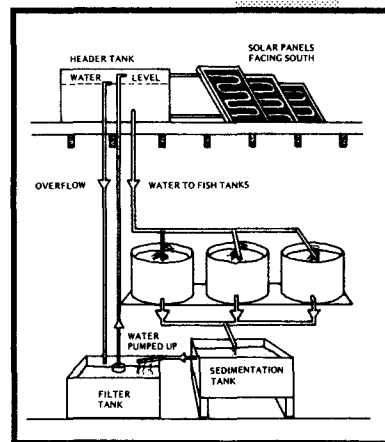
Grow Fish!

BACKYARD FISH FARMING
 by Bryant, Jauncey and Attack

Set up some tanks in the backyard and start raising fish to eat — without having to worry about PCB's and pollutants.

Chapters include four species of fish, ponds and their construction, culture of rainbow trout, of mirror carp, of catfish, of tilapia, water recycling system, a practical recycling system, fish nutrition, breeding and rearing, diseases, and fish farming law.

There are lots of books on raising cattle and swine, but not that many on raising these cold-blooded mothers. This is a British book that first appeared in 1982 and has been reprinted a number of times. It's excellent. A "must-have" if you want to be self-sufficient. Get one! 5 1/2 x 8 1/2 paperback 170 pages
 Cat. no. 637 \$9.95



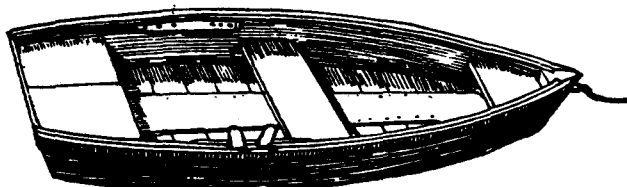
The American Boys Handy Book

by D. C. Beard

1882 Classic!

"If Huckleberry Finn were to settle down, somewhere out there in the territory, and decide to become an author, he might very well come up with a book like this one..." — *Washington Post Book World*

"The Handy Book was the perfect survival manual. It contained plans for 16 kinds of kites and hot-air balloons and fishing tackle. It told you how make and stock an



aquarium, to construct a water telescope and how to camp out without a tent. Or in a hut made from pine boughs. How to build 10 kinds of boats, including a flatboat with a covered cabin. Ice boats, too. One-person canoes. Bird calls. Squirt guns with astonishing range and authority..." — *Henry Kisor, Chicago Sun-Times*

As a kid I read an original copy in our small town library. This is a classic book. Get a copy! 5 1/2 x 7 1/2 paperback 441 pages
Cat. no. 6034

\$10.95

Build a Sundial!

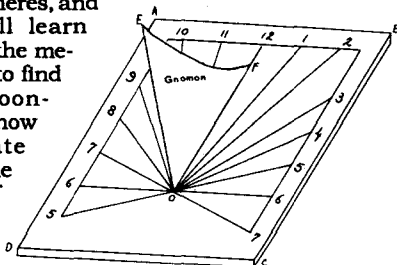
SUNDIALS

Their Theory & Construction

by Albert E. Waugh

Yes, you can design and build the ultimate timepiece — one that is highly accurate, absolutely silent, needs no batteries, and has no moving parts. The only drawback is that it only works when the sun shines.

All common types of dials are covered, as well as analemmatic dials, polar dials, equatorial dials, armillary spheres, and more. You'll learn how to find the meridian, how to find time by moonlight, even how to estimate time from the length of one's own shadow!



Sounds like fun! Get hot and make a sundial. Order a copy! 5 1/2 x 8 1/2 paperback 230 pages 106 illustrations

Cat. no. 45

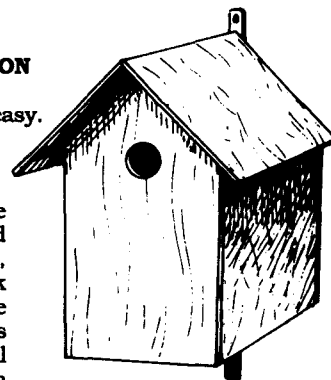
\$4.95

Complete Book of BIRDHOUSE CONSTRUCTION

by Scott Campbell

Build a birdhouse! It's easy. And this nifty little handbook will give you all the details.

Learn about designing the roof, cleanouts, drainage and ventilation, entrance holes, the interior and more. Check out the table that tells you the requirements of the birds you're likely to nest. The final chapter will tell you which



House Your Bird

birds are easiest to attract, how to hang or support a birdhouse, about inspection, pest guards, and more.

When your children or grandchildren ask you how to build a birdhouse, you don't have to admit you don't know how. Whip out this booklet and get underway. Or give it to them as gift. Dirt cheap! good. 5 1/2 x 8 1/2 booklet 48 pages

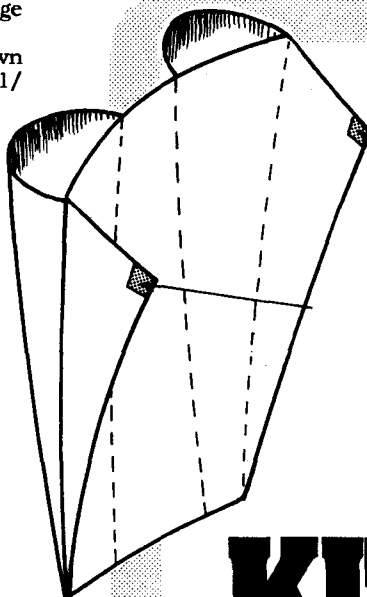
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ONE-HOUR KITES

by Jim Rowlands

You get step-by-step instructions for making and flying 25 different kites including sleds, delta kites, flexible kites, bowed kites, box and stunter kites, and more. You get the straight scoop and materials, techniques, decoration methods and more. Great illustrations! Originally published in Great Britain. Order a copy! 8 1/2 x 11 paperback 96 pages
Cat. no. 481 \$12.95



25 KITES THAT FLY

by Leslie L. Hunt

Next time your wife complains that you spend too much time in the shop and not enough time socializing with your in-laws, tell her to go fly a kite. Hand her this book when you do.

Learn about kitemaking in general. Learn how to make tailless kites such as a butterfly kit, a yacht kite, or a bow kite. Or try making a plane-surface kite such as an English kite, five-point kite, or an elephant kite. And you can make compound kites such as a square box kite, a military kite, or a cross kite. You also get chapters on flying hints, accessories you can build, and miscellaneous useful information.

A great reprint from 1929. Low cost! So affordable, in fact, you can give a copy to each of your in-laws, and tell 'em all to go fly kites! ...while you slip off to the shop. Get a copy. 5 1/2 x 8 1/2 paperback 110 pages

Cat.no. 467

\$2.95

KITES

Incredible Chemical Cross Reference!

Translate Obsolete Old-Fashioned Chemical Names into Modern Equivalents

Lindsay's CHEMICAL CROSS REFERENCE

by Lindsay Publications Inc

If you haven't run into the problem yet, you will. You'll be reading some old chemical formula calling for mirbane oil, salt of satum, or liver of sulphur. A quick check of this handy list of chemical terms would tell you that you need nitrobenzene, lead acetate, or potassium sulphide.

What we did was enter into our computer two thousand chemical equivalents gleaned from a variety of chemistry textbooks, industrial

references, and formularies in our reference library dating back to the early 1800's. The computer merged and sorted the lists into alphabetical order. The result is a chemical cross reference.

We have kept unusual and probably-incorrect spellings. We have made no attempt to verify that the definitions are correct. What we have done is provide you with one master list of the best equivalents we could find. We've already found it useful, and you will too. Get a copy for your reference library. 5 1/2 x 8 1/2 paperback 44 pages

Cat. no. 20170

\$4.95

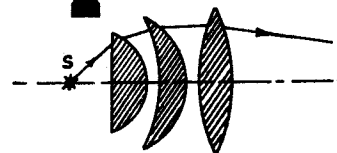


OPTICS & OPTICAL INSTRUMENTS

by B.K. Johnson

Here's a reprint of a 1947 book that reveals in simple formulas how to design or at least understand microscopes, telescopes, collimators, simple and complex lenses, photographic lenses, mirrors and more.

Optics!

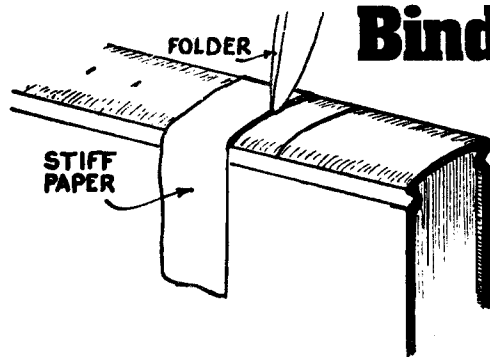


Chapters include: reflection and refraction, focal length measurements, the eye, the telescope, the microscope, photographic lenses, optical projection systems, working and testing optical glass, plus an appendix describing how to silver mirrors, cement lenses, and more.

You won't need this material everyday. But if you need basic info on lenses without all the complex theory, get a copy of this. Quite reasonably priced. 5 1/2 x 8 1/2 paperback 224 pages

Cat. no. 551

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Bind Your Favorite Books!

BASIC BOOKBINDING

by A. W. Lewis

Bookbinding is a centuries-old skill that every book freak (that means you and me) should try. It's not all that complicated. And you'll find people are amazed when you show them a book that you have bound.

There all kinds of binding books on the market. This is probably not the best, but it's so inexpensive, everyone

can afford a copy. You can make the special equipment you need. And you get use locally obtained materials. I know. I've done it.

It takes time to bind a book. But it's fun. Try it. Order a copy of this. 5 1/2 x 8 1/2 paperback 144 pages

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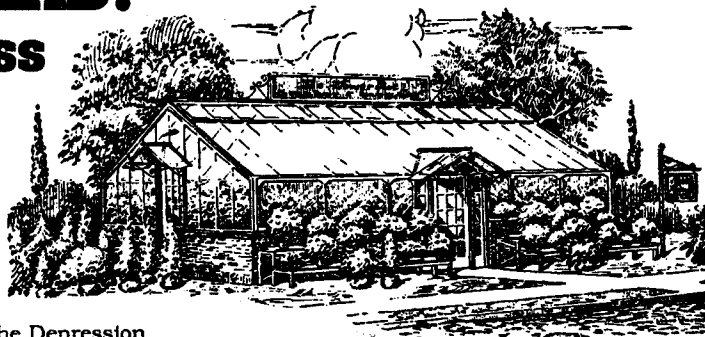
HOMESTEAD!

Tell the Boss to Shove It!

FIVE ACRES AND INDEPENDENCE

by M. G. Kainb

Tell the boss to hang it, and move to the open country and homestead! It's possible. This reprint of the 1935 original will show you as it did thousands during the Depression how to survive comfortably on five acres. You'll learn about greenhouses, coldframes, soil, manure, fertilizers, compost, tools, weeds, orchards, pruning, grafting, seeds, transplanting, berries, things to sell every day, grapes, storage, and much more.



There's so much info here at such a low price, you can't afford not to have a copy. 397 pages

5 1/2 x 8 1/2 paperback

Cat. no. 608

\$6.95

SAUSAGE! Make your own!

Home Sausage Making

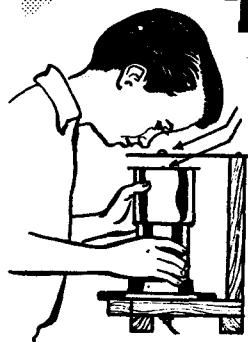
by Charles Reavits

Make great mouthwatering sausage! Over 32 types - both fresh and cured. It's all here! Make summer sausage, Genoa salami, mild salami, bratwurst, frankfurters, bologna, kielbasa, Braunschweiger, chicken sausage, and varieties from bison, squirrel, opossum, rabbits, and even fish! You get over 175 recipes in this great how-to manual and cookbook! Order a copy. 8 1/2 x 11 paperback 168 pages

Cat. no. 635

\$12.95

Mr. Wizard Still Has a Few Things to Teach You!

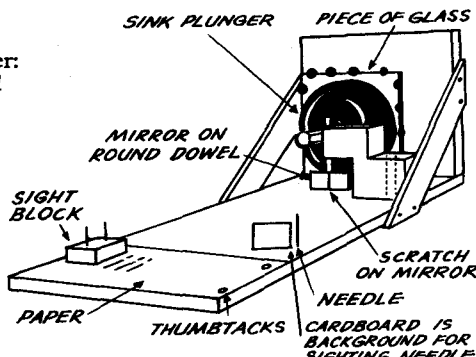


Mr. Wizard's Experiments for Young Scientists by Don Herbert

From the back cover: "Experiment like a real scientist in your own home with Mr. Wizard, the world's best-known science teacher... Here are thirteen science projects, each described in clear, easy-to-follow steps, with complete list of easily accessible equipment..."

Chapters include measuring the sun, a living-room zoo (an ingenious ant-farm), invisible seeds, crystal garden, glue from milk, statistics, grocery farm, building a water drop microscope, the rolling jar that works, collector's items (geology), blowing up balloons with yeast, a detective and his solutions (analytical chemistry), and weighing the air.

Sure, the title says "for young scientists", and this is great for kids. But I was thinking of you. Most of the experiments I've seen many times. But Herbert's ant farm, his homemade microscope, and his aneroid barometer from a bathroom



plunger are great. You can make a very simple pinhole camera with a window shade and simply and quickly measure the sun's diameter. Drag the whole neighborhood in and amaze them with your intelligence.

Fun book. Well illustrated. It will keep the neighborhood kids busy and off your back while you sneak away to build something really useful - like a moonshine still.... Good quality at a fair price. Get a copy. 5 1/2 x 8 1/2 paperback 187 pages

Cat. no. 584

\$7.95

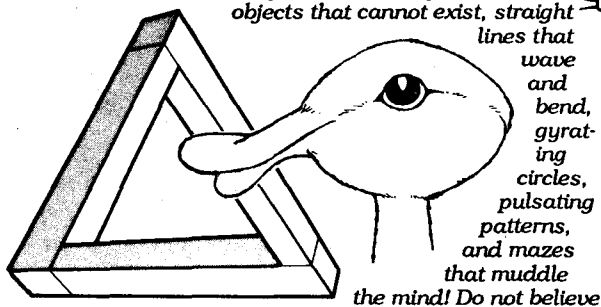
GO BLIND!

The Great Book of Optical Illusions

by Gyles Brandreth

I've been told that reading this catalog too often will make you go blind, perhaps even make hair grow on your tongue! If your eyesight hasn't given out entirely by now, then totally destroy it with these optical illusions.

From the back cover: "If you open this book, be prepared for moving specks before your eyes, gray spots that appear and disappear, solid objects that cannot exist, straight



lines that wave and bend, gyrating circles, pulsating patterns, and mazes that muddle

the mind! Do not believe

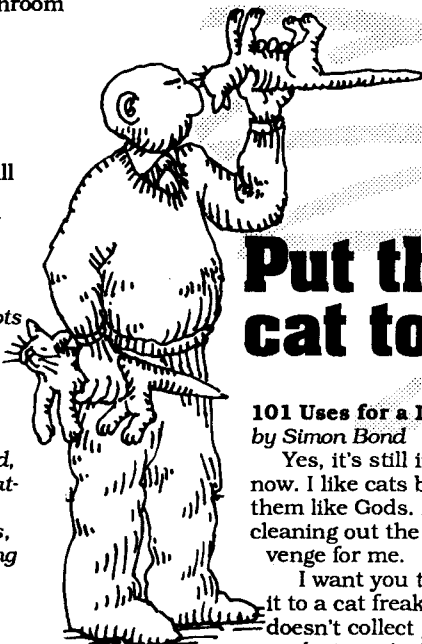
anything you see. Do not attempt to read this book with a weak stomach. You have been warned. . . "

If you regularly read this catalog, then you certainly don't have much taste in literature! If you're wondering if you can handle this great literary work, don't sweat it. It's written for kids. Chances are you can get through it (although my 8 year-old had to help me at times...)

Fun book. No useful value. Cheap. Interesting illusions. Old standards and new ones, too. 5 1/2 x 8 1/2 96 pages.

Cat. No. 732

\$3.95



Put the ol' lady's cat to good use...

101 Uses for a Dead Cat

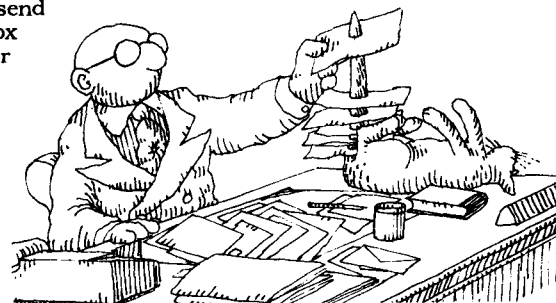
by Simon Bond

Yes, it's still in print - for more than ten years now. I like cats but not the people who treat them like Gods. I guess I spent too many years cleaning out the litter box. This is mental revenge for me.

I want you to buy a copy of this and send it to a cat freak. Just be sure the cat freak doesn't collect guns or experiment with explosives. And if you're a cat freak, for

God's sake, don't send me a dirty litter box as your revenge for my offering this!

Crazy book. All cartoons. Not a bit of text. A classic. Get one! 6 1/2 x 5 paperback 100 pages Cat. no. 6040 \$4.95



Windmotors

WINDMOTORS

by F. E. Powell

reprinted by Lindsay Publications

Put the wind to work with one of these turn-of-the-century designs.

You'll learn about different types of windmills, some of them unusual. Then you'll be shown how to build a model tower windmill similar to those in Holland.

Chapter 3 will show you how to build a real power-producing windmill with three foot diameter sails. It may be a small windmotor, but it can drive a small dynamo. You get all the important design details.

In Chapter 4 you are shown how to build a 6 foot diameter windmill capable of driving a 30 watt dynamo at 16 mph. You'll see many detailed drawings showing how the all-wood machine is built, and how metal gearing brings the power down to ground level.

Another chapter reveals a 10 foot diameter windmotor. The last chapter gives you tips on generating electricity—high tech in 1910! Obviously better generators are available now, but the basic principles still apply, and the control methods still work.

I think you'll enjoy this book. These mills may not be as hot as modern designs, but building one of these babies should be relatively easy and low-cost. You get great designs from a simpler time when simpler materials were used to get surprisingly good performance.

A really nice little book to have. Low cost. Get a copy. 5 1/2 x 8 1/2 paperback 88 pages well-illustrated
Cat. no. 4279 \$4.95

HOW TO STAY ALIVE IN THE WOODS

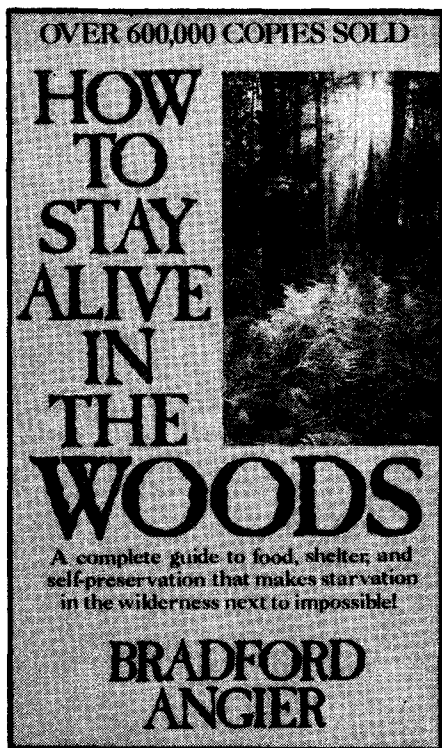
by Bradford Angier

"For over twenty years, sportsmen, hunters, and camping families have been carrying this book with them every time they venture into the woods. It is a life-saving tool which details all of nature's resources and shows — in 26 clearly written, illustrated chapters — how to find food, water, warmth, and shelter when lost or stranded.

The book is full of secrets that can help save time, energy — and even lives. For example, it tells: how to spark a fire by using a drop of water as a lens; how to obtain meat and fish by primitive means; and how to protect yourself against natural hazards..."

That pretty well says it. This "drug-store" paperback is wall-to-wall practical tips and how-to. Lots of quality information for a low price. A classic! Get one! 4 x 7 mass paperback 285 pages.

Cat. No. 682 \$5.95



SAMSON OIL RITE WINDMILLS

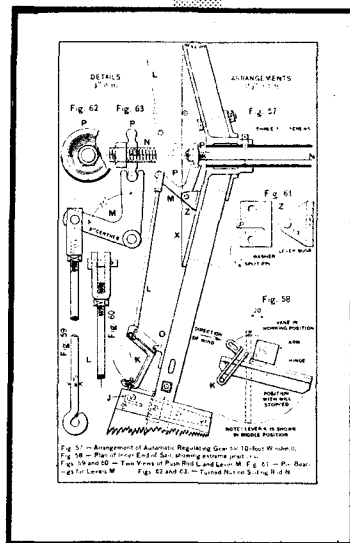
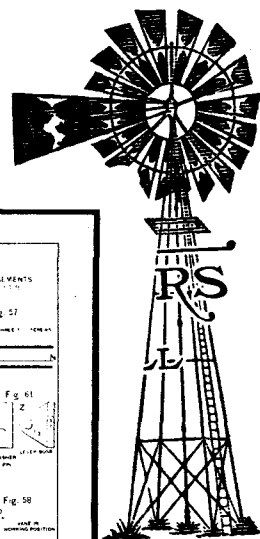
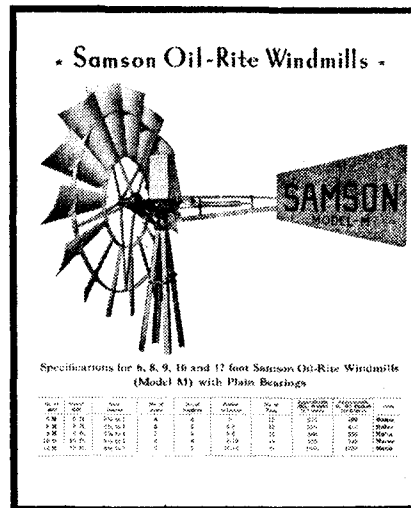
by Stover Mfg. and Engine Co.

Just about every farm at the turn of the century located in the Midwest and Plains states had a windmill to pump water for livestock. Here's the sales catalog for one of the leading manufacturers of those mills.

You'll see all the mechanical details: the gears, bearing, vanes, pumps, and the rest. And you'll get complete specifications.

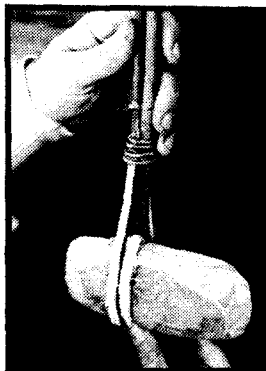
If you're interested in wind power, this is a great reference, since these mills were built to perform and last. I'm sure many are still in operation. If you're going to design your own windmill, it might pay to look at a proven design. And besides, the price is right. 8 1/2 x 11 booklet facsimile reprint 22 pages
Cat. no. 2011
\$4.50

Samson Windmills



Stay Alive in the Woods!

Will You Survive?



Outdoor Survival Skills

by Larry Dean Olsen

From the back cover:

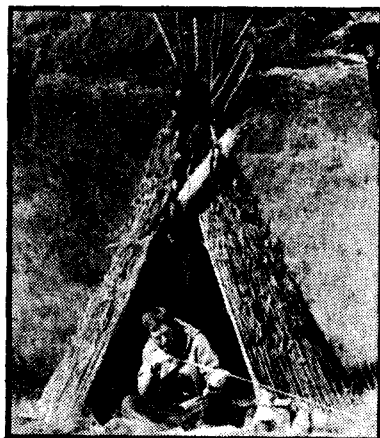
This is the revised and expanded fifth edition of the classic manual on outdoor survival. Chapters on shelter, fire, water, plants, animals, and special skills explain how to: • build a lean-to; brush, pole, or grass thatch, wickiup; wattlework shelter; snow cave • make fire with flint, bow drill, hand drill, fire saw; make a fire carrier or bundle • obtain drinking water from dew, water pockets, an evaporation still • harvest and prepare food plants in the wild • fashion tools and weapons from stone, bone and wood • make rawhide, tan leather; weave bark and other natural fibers •

*harvest grasshoppers, ants, grubs; trap, hunt and stalk larger game; make fish hooks, traps and spears**

With this information you can walk into the wilderness with just the clothes on your back and survive! Some people believe that the wackos in the mid-East might bomb us back to the stone age (to quote Gen. LeMay). It might pay to be ready to live like a caveman! Native Americans knew these things two centuries ago. But who knows today? You can! Get a copy. Well-illustrated. 6x9 paperback 224 pages

Cat. no. 6041

\$11.95



Amaze Your Friends With Your Scientific Knowledge!

The New York Times Book of Science Literacy

edited by Richard Flaste

"Why is the night sky dark? Why is the universe so lumpy? Did life begin in outer space? What language did Jesus speak? Is alcoholism inherited? Is art unhealthy? Why does the knuckleball behave that way?"

You'll find out. This is a collection of very readable and enjoyable feature articles that have run weekly in the New York Times (and other papers throughout the country). This is fun reading, and not that heavy. You will learn a lot about the world around you while being entertained.

I shouldn't offer this because you can buy it in just about any decent bookstore. It's a best seller

in its category. The other problem is that it's hardcover and too damned expensive. But then, I can't do anything about that.

Learn about liars, management of pain, when cows belch, dreams of levitation and much more.

But it doesn't answer the questions I have... like: Why is my office so dark? Why is my bed lumpy? Is there life in the Post Office? Is bookaholism inherited? Why does the art of book publishing make me unhealthy? And why do knuckleheads behave the way they do?

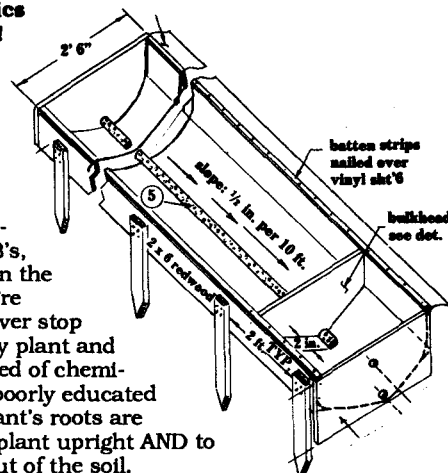
I recommend this because it will educate you and broaden your world. I've learned a lot. Fun

Home Hydroponics and how to do it!

by Lem Jones

People are SO ignorant! If you tell them that it's possible to grow plants in chemicals, they immediately think of PCB's, heavy metals, even the ozone layer. They're horrified! They never stop to think that every plant and animal is composed of chemicals. They're too poorly educated to know that a plant's roots are there to hold the plant upright AND to suck chemicals out of the soil.

I'm sure you know a bonehead like this. Get a copy of this and give it to them. They need educating.



Grow Food in Chemicals! Horrors!

For the rest of us, we can amaze the boneheads by growing tasty giant tomatoes in sand, vermiculite or pebbles in the dead of winter! They won't know how it's done. In fact, look at all the people that travel through the pavilion at Epcot Center in Florida that features hydroponics. They come out believing it's high-tech. Nuts! It's been around for at least a century!

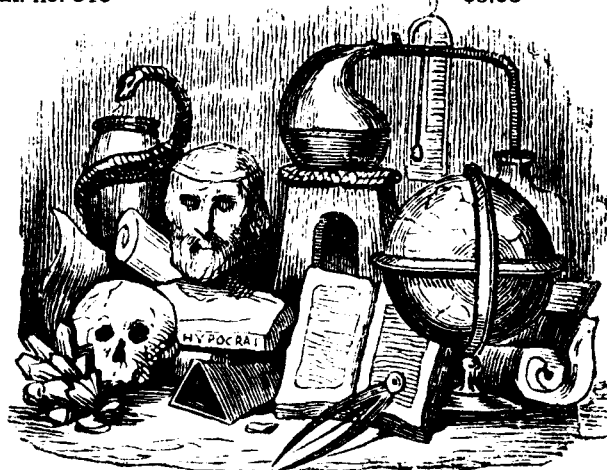
This is an updated and revised edition of a classic book that has been in print since '77. Chapters cover history, simple systems, equipment, building a greenhouse, growing media, nutrient solutions, plant care, plant diseases, insect problems, and you get a list of reference materials and suppliers.

Hydroponics can be as simple as a 10" oval pan on a simple wooden frame filled with pea gravel or wood shavings. Or it can be an intricate greenhouse with pumps and timers and lights. It's whatever you want it to be.

Get a copy of it. If you can develop a giant form of Venus Flytrap that eats mothers-in-law, let me know. I'm in need! Otherwise grow some potatoes or sweet corn. Sunflowers might be difficult. Great first book. Get started! 5 1/2 x 8 1/2 paperback 142 pages

Cat. no. 610

\$9.95

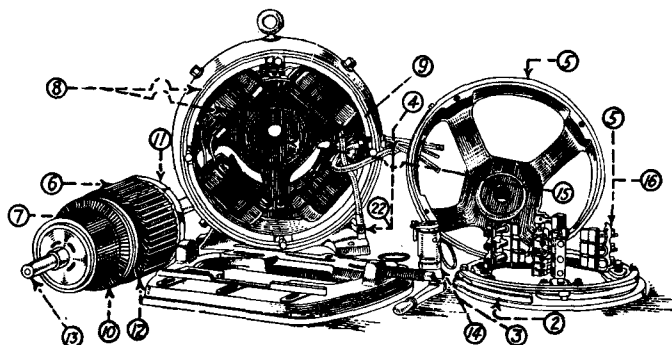


reading! Order a copy soon because I probably won't offer it too long. It's too common for this catalog. 6x9 hardcover 385 pages - no pictures to speak of

Cat. no. 583

\$24.95

ARMATURE WINDING AND MOTOR REPAIR



ARMATURE WINDING AND MOTOR REPAIR

by Daniel H. Braymer

From 1920 comes this motor rewinding book loaded with drawings and photographs that will show you how to rebuild both AC and DC machines.

Chapters include: DC machines, AC machines, shop methods of rewinding DC armatures, making commutator connections, testing DC armature windings, operations before and after winding DC armatures, insulating coils and slots for winding, shop methods for rewinding AC machines, testing induction motor windings for mistakes and faults, adapting DC motors to changed operating conditions, practical ways for reconnecting induction motors, commutator repairs, adjusting brushes and correcting brush

troubles, inspection and repair of motor starters and generators, diagnosis of troubles, methods to solve special troubles, tables and more.

You'll find a chapter that shows you how to build special tools and jigs, an armature sling, a pinion puller, coil winding machine, a coil taping machine, commutator slotter, armature banding machine and more.

The motors described are large types used in factories. But the principles apply to the smaller motors you and I use. You'll learn how to reconnect induction motors for different voltages and phases, how to operate a DC motor as a generator and vice-versa, change the DC motor windings for different voltages, and more.

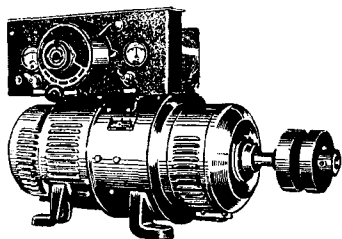
You'll be taught all the techniques - from removing old windings and cleaning slots, to winding the coils, insulating the end connections, inserting the coils, painting the windings, relining split bearings, and much more. You get data on all types of wave and lap windings, varnishing and insulating materials, and much more.

I make you no promises, but this is the logical place to start should you want to rewind a motor to particular voltage, wind a generator or alternator for use with a windmill or waterwheel, rewind a big generator for use as a welder, modify a DC motor for use in an electric car, and so on.

This is a beautiful book. You get over 500 pages of clearly written, wall-to-wall practical how-to with excellent illustrations. It's a gem that should be in the reference library of most "machine freaks" (that includes you, son). Get a copy 5 1/2 x 8 1/2 paperback 540 pages Cat. no. 4384

\$16.95

HOW TO RUN THREE PHASE MOTORS ON SINGLE PHASE POWER



Yes! You can run three-phase motors on single-phase power using any one of three excellent methods in use since the turn of the century. First, lathes, drill presses, and other machine tool motors can be run with the capacitor method. Second, the autoformer method (a technique you should buy rather than build) is useful for motors running under continuous full load. And finally you can run a whole shop full of three-phase motors from a single, easy-to-build dynamic converter! No re-winding is necessary. These methods are good to at least 150 hp and 220 volts! Low starting currents and excellent power factor are possible.

Basic three-phase and induction motor theory is included. Complete with drawings, diagrams, and capacitor values. 4 1/2 x 7 booklet 20 pages, 18 illustrations - a BARGAIN! Cat. No. 81

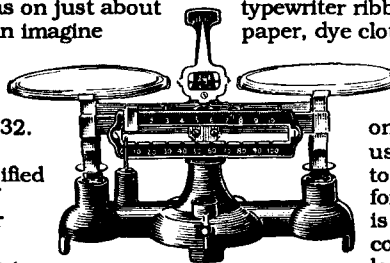
only \$3.00

Manual of FORMULAS

MANUAL OF FORMULAS Recipes, Methods and Secret Processes

edited by Raymond Walles
reprinted by Lindsay Publications

Here's a great low cost collection of hundreds of formulas on just about every subject you can imagine compiled from the pages of *Popular Science Magazine* and published in 1932. You can make soap bubble liquids, solidified gasoline, waterproof matches, lacquer for brass, silver solder, photographic printing paper, slow-drying putty, blackboard paint, thermite welding mixtures, pewter alloy, garden sprays, soaps, preparations for dance floors(?), concrete waterproofing compound, fireworks, cosmetics, adhesives and much more.



You'll learn how to mix up compounds for polishing and plating metal. Learn how to blacken brass, blue steel, to make silver nitrate from old spoons, mix up low temperature alloys, dry flowers, brew wine, re-ink typewriter ribbons, make blueprint paper, dye cloth, make flypaper and much more.

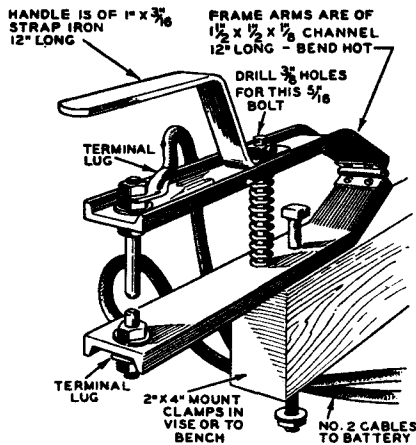
Unlike other formularies, this one is new enough to be useful and old enough to have unusual formulas. And the price is quite reasonable compared with the large volumes which are interesting but often contain many formulas that are of little practical value. An interesting book of definite value. Worth having. Order a copy today. 4 1/2 x 8 paperback 250 pages

Cat. no. 20366

\$9.95

Incredible Electrical Plans!

1945 LeJay Manual!



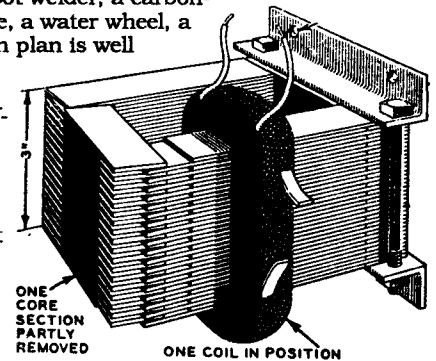
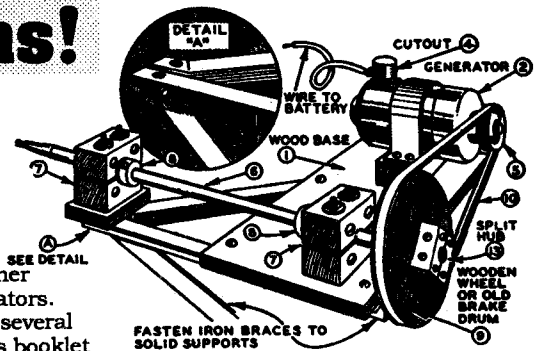
Most of the articles in this edition deal with the conversion with now-antique auto generators into 110 volt alternators, other voltage generators and motors. A lot of this info was used in areas of the country that hadn't been electrified. You could buy old generators from auto junk yards, build a windmill, repair old auto batteries, and use the electricity to run homebuilt motors, welders and so on.

Most of the information in this booklet is now of limited value simply because you can't get the generators listed. But the rewinding data, hints

and tips provided can help you in other rewinding projects for other types of generators.

There ARE several projects in this booklet each of which is worth the entire price of the publication. For instance, you can build a small but useful spot welder powered by nothing more than a string of auto batteries. You get plans for an arc welder, a transformer spot welder, a carbon-arc torch, electric bicycle, a water wheel, a windmill and more. Each plan is well illustrated.

This is a manual worth having in your reference library. Great ideas. Great value. Fun to read. Useful projects. Worth having. Order a copy! 8 1/2 x 11 booklet 32 pages
Cat. no. 20013
\$5.95



Contents of LeJay Manual

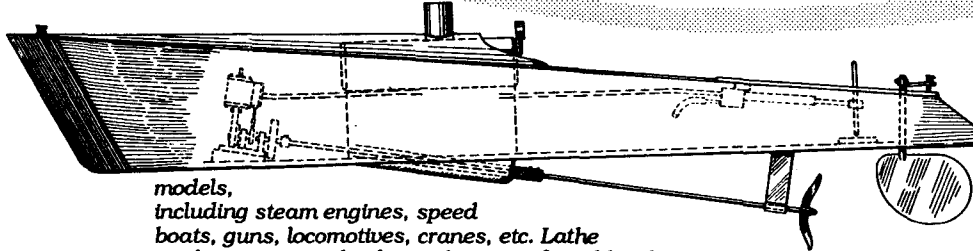
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|--|---|---|--|
| 1 Plans for 110 Volt AC Light Plant made from Ford Model "T" Generator | Propeller and Generator Charger | Motor made from Dodge "G" or "GA" Generator | Leece-Neville Generators |
| 2 200 Watt AC Generator for Automobile Made from Ford Model "A" Powerhouse | 11 A 110 Volt AC Light Plant Generator | 25 A Bench or Breast Drill for 6, 12, or 32 Volts from "T" Generator | 40 Armature Diagrams for Wagner Generators |
| 3 A 6 Volt Slow Speed Generator (with plans for all-metal windmill) | 12 A "B" Eliminator For Your Battery Operated Radio | 26 A 6 Volt Motor for Drill Press, Washing Machines, etc. made from Model "T" Generator | 41 Armature Diagrams for Westinghouse Generators |
| 4 6 Volt & 12 Volt Slow Speed Generators from Dodge "G" or "GA" Northeast Generator also from other Generators | 13 An Automobile Generator Booster Control | 27 One 12 volt Motor and One 32 volt Motor Made from Model "T" Generator | 42 Plans for Installing Lights on Your Tractor |
| 5 A 32 volt slow speed wind light Plant Generator | 14 A 6 Volt Slow Speed Generator from Standard 14 Slot 28 Bar Generator | 28 Two 6 Volt Generators from the Dodge, also general information | 43 Two Types 110 Volt AC Insect Exterminators |
| 6 One 32 Volt Motor, One 110 Volt Motor, One 32 Volt Generator, One 110 Volt Generator from Dodge Generator | 15 A 32 Volt Constant Speed Generator made from Ford "T" Generator | 29 A 110 V. or 220 VAC Portable Transformer for Arc Welding | 44 An Electric Scooter Using a 6 or 12 volt Battery for Power |
| 7 How to Make a Grinder, Series Motor, Constant Speed Motor, A Universal AC or DC Motor and a Soldering Iron | 16 A 2 Volt Slow Speed Generator from Standard 14 Slot 28 Bar Generator | 30 A 110 Volt Spot Welder - 1 Kw. Input Normal Draw 10 to 11 Amps | 45 An Electric "Go Bike" Using a 6 or 12 volt Battery for Power |
| 8 A 75 to 110 Ampere Arc Welder Made from Dodge "G" or "GA" Generator. Also Dual Welders. | 17 How to Convert A 6 Volt Cut-Out for 2 Volt Operation | 31 A Direct Drive 32 Volt Wind Plant - All Metal Construction | 46 A Carbon Electrode Holder for Soldering, Brazing and Light Welding Direct from Six-volt Storage Batteries |
| 9 Pendulum Type Fence Controller made from Ford "T" Coil | 18 Directions for Repairing Your Own Batteries | 32 A Battery Spot Welder | 47 Ball Type Fence Controller Made from Ford "T" Coil |
| 10 Plans for Building a Complete Wind Light Plant Including Tower, | 19 A Water Wheel Made from Old Automobile Wheel | 33 Armature Diagrams for Autolite, Bosch-Autolite and Bosch Generators | 48 110 Volt AC 500 Watt Self Excited Generator from Dodge Model "G" or "GA" generator |
| | 20 An Electric Outboard Motor from Old Ford "T" Generator | 34 Armature Diagrams for Delco, Delco-Remy, & Remy Generators | 49 110 Volt AC 60 Cycle 1/2 HP Synchronous Motor from Dodge Model "G" or "GA" Generator |
| | 21 A Gas Engine or Motor Driven Generator with Drawings in Detail | 35 Armature Diagrams for Ford A, B and V8 Generators | 50 An AC Welding Transformer Using Dodge Generator Coils |
| | 22 An Armature Growler for Testing Auto or Slow Speed Armatures | 36 Armature Diagrams for Northeast Generators | Appendix Windpower Information, Definitions, etc. |
| | 23 Two 32 Volt Series Motors from Dodge "G" or "GA" Generator | 37,38 Armature Diagrams for Atwater-Kent & Dyneto Generators | |
| | 24 A 32 Volt Heavy Duty | 39 Armature Diagrams for | |

MODEL MAKING

by Raymond F. Yates
reprinted by Lindsay Publications

"A practical treatise for the amateur and professional mechanic — giving instructions on the various processes and operation involved in model-making and the actual construction of numerous

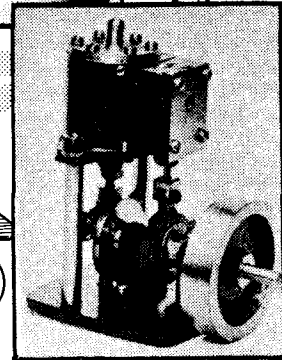
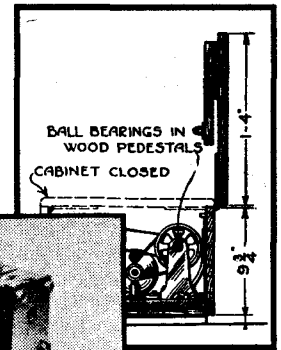
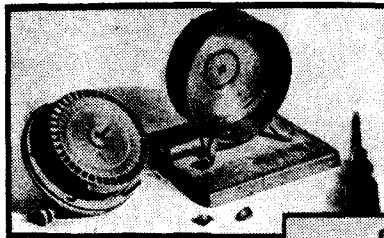
Model Making Great Collection of Model Ideas



models, including steam engines, speed boats, guns, locomotives, cranes, etc. Lathe work, pattern work, electroplating, soft and hard soldering, grinding, drilling, etc., are also included."

Sounds like a great book doesn't it? Actually the claims are a little inflated because the author tries to cover too much. Each topic could be a book in itself. Still, it is fascinating, and guaranteed to fill your head with ideas.

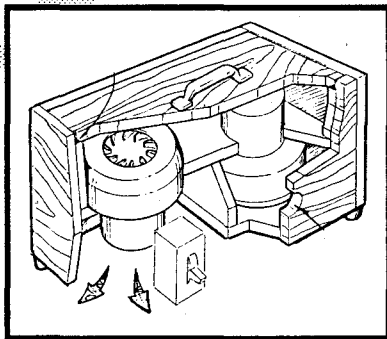
Chapters include: workshop, lathe work, drilling, soldering, hardening and tempering steel, abrasives, patternmaking, electroplating, model slide crank steam engine, model twin-cylinder engine, single-cylinder engines, model twin-cylinder marine engine, flash steam plants, flash steam plant for model airplanes, model steam



turbine, model boilers, boiler fittings, model hydroplane, lake freighter, gasoline engine, model steam locomotive tank, siege gun, steam yacht, 34" monoplane and much more!

Some of these projects need castings which are not available. But with all the dimensions and photos given, you should be able to modify and improve the designs. This is great raw material for the model builder.

So if you have a small lathe and want to build something in the worst way, or you just collect plans, or you just want a great book for a rainy afternoon, grab this gem from 1925. Loaded with great illustrations and great ideas. Don't pass it up. Order a copy today! 5 1/2 x 8 1/2 430 pages
Cat. no. 4325 \$14.95



Build a Vacuum Forming Machine Mold Plastics!

**DO IT YOURSELF
VACUUM FORMING**
by Douglas E Walsh
The author wrote me:

"When I tried to do research for this book I was surprised at how little information there was on the subject of Vacuum Forming. When I was put in charge of buying a machine for where I work, I was amazed at how few sources there were and the high cost of a simple machine....

I tried the obvious way first, as I'm sure many other have by

using a kitchen oven and shop vacuum cleaner. The results were OK, but limited to simple parts in thin plastics. The oven part works fine but the vacuum cleaner just didn't provide enough vacuum. This must be what discourages most people because real vacuum pumps cost hundreds of dollars...

Not to be discouraged, I thought about it some more and came up with eight other sources for vacuum, most of which are inexpensive and one is totally free! I was then able to combine a vacuum cleaner with a cheap source of higher vacuum. This

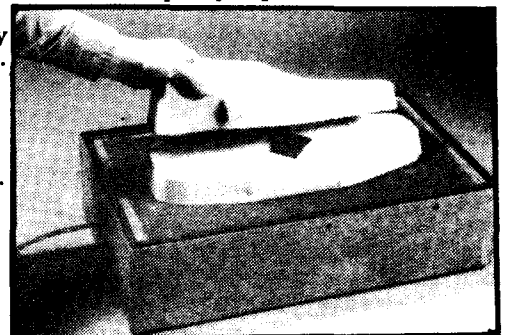
gave me that magic combination of high vacuum and high flow necessary for serious forming.

This easy-to-read book shows you how to get set up to do simple forming for around \$15.00 or less if you scrounge for parts. You can also build a two-stage high vacuum system for \$50-\$60 that can form up to 1/4" thick plastics...."

You can produce magnetic signs, parts for models, and all kinds of things if you use your imagination. You can put this simple, but powerful mass-production technique to work for you because you don't have to spend a fortune on equipment.

Chapters include the basics, heat sources, vacuum sources, forming equipment, plastics, molds, forming and finishing. You get straight forward to-the-point how-to with plenty of photos and drawings.

Possible money maker! Fun to try. Here's an excellent book by a man who has done it, and explains it clearly. Get a copy! 5 1/2 x 8 1/2 booklet-style spine 128 pages
Cat. no. 1308 \$9.95



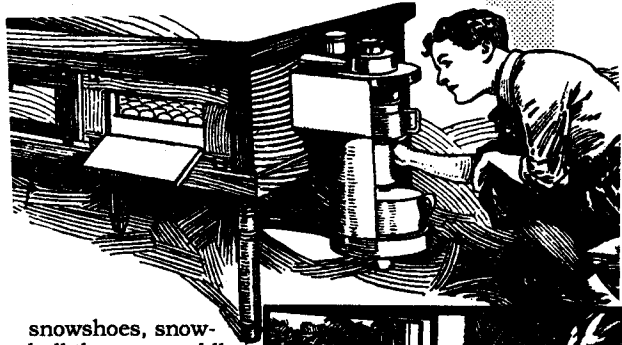
Boy Mechanic 2



Boy Mechanic Book Two
reprinted by
Lindsay Publications

"1000 things for boys to do. How to construct devices for winter sports, motion-picture camera, indoor games, reed furniture, electrical novelties, boats, fishing rods, camps and camp appliances, kites and gliders, pushmobiles, roller coaster, ferris wheel and hundreds of other things which delight every boy with 995 illustrations."

Learn how to do plane-table surveying and make accurate maps. Once you've mastered that, you'll be shown how to do the same job from carefully taken photographs. Make a four-passenger bobsled, and ice glider,

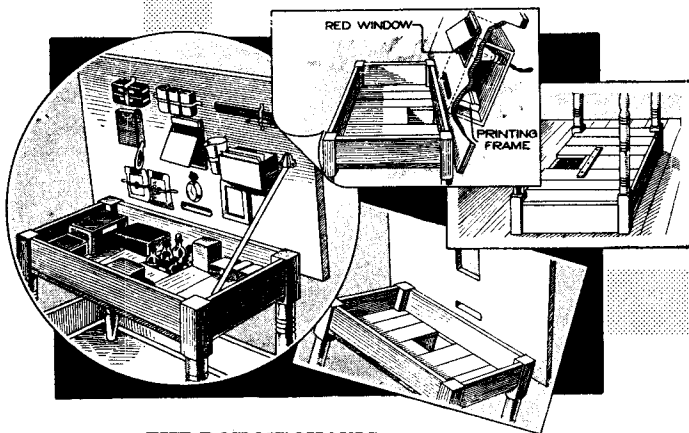


snowshoes, snow-ball thrower, paddle-wheel boat, tandem monoplane glider, movie camera and projector, laboratory gas generator, soap box racer, oil burner for cook stove, combination lock for a drawer, magic tricks, electric score board, disc-armature motor, and hundreds of other things.

You get wall-to-wall illustrations. You may attempt only two or three projects, but that's okay. You'll countess hours of fun just browsing through this idea-generating volume from 1915. It's great.

Like volume one, this is a classic worth having. Fascinating! Order a copy. You'll like it. 5 1/2 x 8 1/2 paperback 473 pages
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for libraries and collectors. Only a fraction of the printing has been so bound. May be out of stock for long periods of time depending on supply and demand.
Cat. no. 20684 \$29.95



THE BOY MECHANIC
— Book 1
compiled by H. H. Windsor
reprinted by Lindsay Publications

"700 Things for Boys to Do. How to construct wireless outfits, boats, camp equipment, aerial gliders, kites, self-propelled vehicles, engines, motors, electrical apparatus, cameras and hundreds of other things which delight every boy."

You may have thumbed through a copy of Boy Mechanic when you were a kid and dreamed of building just a few of the fantastic projects shown. You probably don't remember this 1913 volume.

You get wall-to-wall projects that in most cases are not too detailed, but are more than enough to whet the appetite and make you want to get started. Build a Wright-brothers style handglider! A Wimshurst machine! An arc light! An electric stove! A toy steam engine! A telegraph key! A water rheostat! An alarm clock chicken feeder! A flat bottomed boat! An induction coil! A library table! A machine to put paraffin on wire! A pipe fitting steam engine! An electric postcard projector! An ammeter! A paper hot air balloon! A workbench!

Boy Mechanic 1

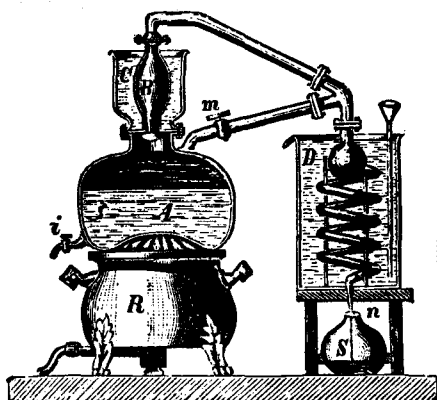
You'll find information on imitation arms and armor, magic tricks of all kinds, chair caning, sundials, homemade phonographs, gymnasium equipment, an ice yacht, a pipe fitting lathe, a paper boat, a cross bow, an electric motor, glass blowing and much, much more.

Many people have asked us to reprint the Boy Mechanic. One look through it, and you'll see why. It's a combination of practical projects, not-so-practical projects, crazy ideas, and plain o'l fun nostalgia. It's a classic book well worth your consideration. Order a copy today! 5 1/2 x 8 1/2 paperback 469 pages
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Wagner's Chemical Technology 1872

HANDBOOK OF CHEMICAL TECHNOLOGY 1872

by Rudolf Wagner

translated by William Crookes

reprinted by Lindsay Publications

In the 1872 German chemists were world famous, and Wagner's Handbook was the master reference for chemists the world over. This translation of the eighth German edition can be yours for much less than an original copy should you be able to find one.

And what a book it is!

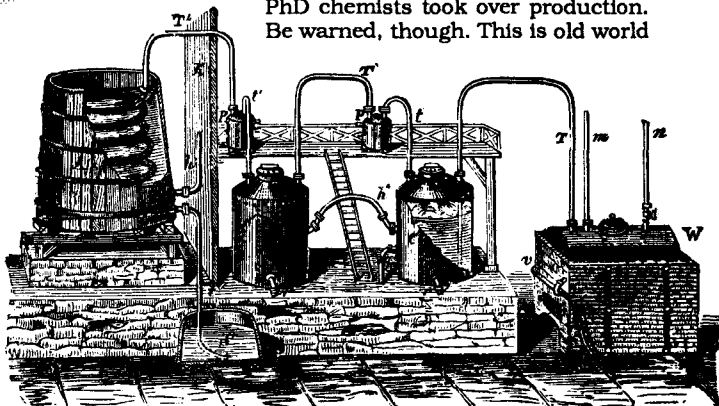
You'll early and/or simple ways of making chemicals, refining metal, formulating glue, paper, dyes or just about anything else chemical in nature. I have never seen such a comprehensive collection of incredible technological detail in a single volume anywhere else.

Want to refine iron ore into steel? Want to make sulphuric acid? And use it to make nitric acid? And use it to make explosives? Care to brew beer? How about a batch of whiskey? A loaf of bread? And on, and on, and on. You get a whole encyclopedia in a single volume — 745 pages of small type with 336 illustrations mostly of manufacturing apparatus.

This is not really a cookbook. You won't find step-by-step instructions. But you will find more detail on a wider variety of basic essential processes (many of them made obsolete by more complicated processes) than in any other volume. For instance, if you're investigating the tanning of hides, making

illuminating gas, charcoal, soap, or anything else, you'll find that this single volume can provide more information in less time than a search through most libraries for a month of Sundays.

Yes, this is an expensive volume, but you actually get more than what you pay for. This is quality. Today we have sophisticated, hi-tech processes that are closely guarded industrial secrets. Here you learn how it was done before large corporations and PhD chemists took over production. Be warned, though. This is old world



thinking. You run the risk of poisoning yourself. These methods can be and probably are dangerous.

This incredible classic text will definitely fill a void in your reference library. I've never seen anything like it. And it's almost a sure thing you haven't either. It's expensive, but it's worth every penny and then some. Order a copy. You won't be disappointed. 5 1/2 x 8 1/2 hardcover 745 pages 332 illustrations

Cat. no. 4996

\$29.95

CONTENTS

• **Division I — Chemical Metallurgy; Alloys; and Preparations Made and Obtained from Metals.** Iron; Pig or crude iron; Malleable, bar or wrought-iron; Steel; Iron Preparations; Cobalt; Nickel; Copper; Preparations of Copper; Lead; Preparations of Lead; Tin; Preparations of Tin; Bismuth; Zinc; Preparations of Zinc; Cadmium; Antimony; Antimonial Preparations; Arsenic; Quicksilver or Mercury; Preparations of Mercury; Platinum; Silver; Gold; Manganese and its preparations; Permanganate of Potassa; Aluminum; Magnesium; Electro-Metallurgy

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Sulphide of Carbon; Hydrochloric Acid and Glauber's Salt, or Sulphate of Soda; Bleaching Powder and hypochlorites; alkalimetry; Ammonia and ammoniacal salts; Soap making; Boric or boracic acid, and borax; Production of alum, sulphates of alumina, and aluminates; Ultramarine

• **Division III — Technology of Glass, Ceramic Ware, Gypsum, Lime & Mortar** Glass manufacture; Ceramic or earthenware manufacture including hard porcelain, tender porcelain, stoneware, Fayence ware, common pottery, brick and tile making; Lime and lime-burning; Mortar including common or air-setting mortar and hydraulic mortar; gypsum and its preparation

• **Division IV — Vegetable Fibers and Their Technical Application** — Hemp; Cotton; Paper making — hand paper, machine paper, pasteboard and other paper; Starch; Sugar manufacture; Cane Sugar; Beet-root; sugar; Grape sugar; Fermentation; Wine-making; Beer-brewing; preparation or distillation of spirits — preparation of vinous mash and distillation of the vinous mash; Bread baking; Manufacture of vinegar; Preservation of

wood; Tobacco; Technology of essential oils and resins; Cements, lutes and putty

• **Division V — Animal Substances and Their Industrial Application** — Woollen industry; Silk; Tanning; Glue Boiling; Manufacture of Phosphorus; Requisites for producing fire; Animal charcoal; Milk; Meat

• **Division VI — Dyeing and Calico Printing** — Aniline colours; Carbolic Acid colours; Naphthaline pigments; Anthracene pigments; Pigments from Chinchonine; Red Pigments occurring in plants and animals; Blue dye materials; Yellow dyes; Bleaching; Dyeing of spun yarn and woven textile fabrics; Printing of woven fabrics

• **Division VII — Materials and Apparatus for Producing Artificial Light** — Artificial light from candles; Illumination by means of lamps; Gas; Paraffin and solar or petroleum oils; petroleum

• **Division VIII — Fuel and Heating Apparatus** — Fuel; Wood; Peat; Carbonized peat; Brown-coal; Pitt coal or coal; Petroleum as fuel; coke; artificial fuel; gaseous fuel; heating apparatus; heating dwelling houses; boiler heating and consumption of smoke

Procedures in EXPERIMENTAL PHYSICS

by John Stong

reprinted by Lindsay Publications

If you consider yourself an experimenter, an inventor, or a builder of unusual machines and equipment, you *must* have a copy of this fantastic classic text. No two ways about it.

You'll find wall-to-wall practical how-to and incredible illustrations on almost every one of the more than 600 pages.

Chapters include: laboratory glass blowing, laboratory optical work, technique of high vacuum, coating of surfaces by evaporation and sputtering, the use of fused silica, electrometers and electroscopes, geiger counters, vacuum thermopiles and the measurement of radiant energy, optics, photoelectric cells and amplifiers, photography in the lab, heat and high temperature, notes on the materials of research, notes on the construction and design of instruments and apparatus, and molding and casting.

This is some incredible stuff! Learn how to blow glass and make aspirators, distillators, and so on. Learn how to seal copper to glass so that you can imbed electrodes. Learn how to rough cut lens blanks from large plates of glass and then grind them into lenses on your homebuilt lens grinder. Learn how to make a parabolic telescope mirror using the standard techniques. Learn to make unusual equipment to test the finished mirror. Learn how to grind a Schmidt lens.

Build high vacuum roughing pumps, getters for creating the highest vacuums, and diffusion pumps using mercury and oil. See charcoal traps, kinetic vacuum systems, vacuum gauges of all types. Remember, all this comes with construction details.

Learn how to silver mirrors with a variety of methods including vacuum sputtering.

Incredible Illustrations!

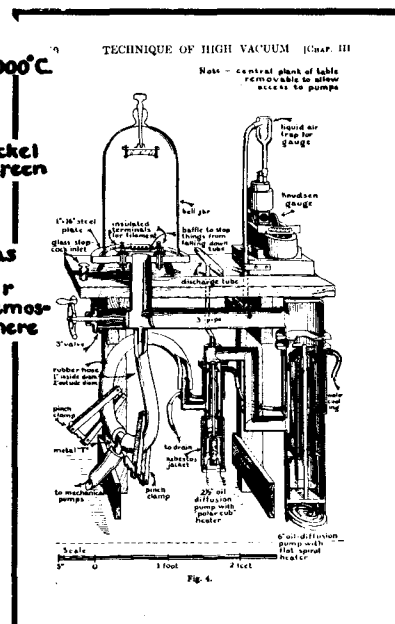
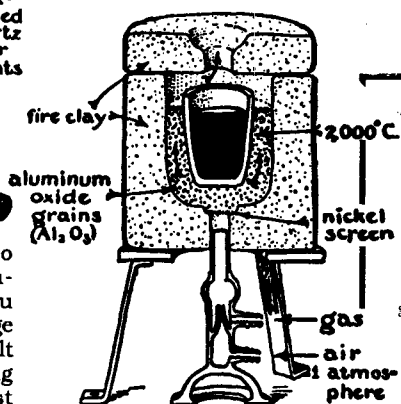
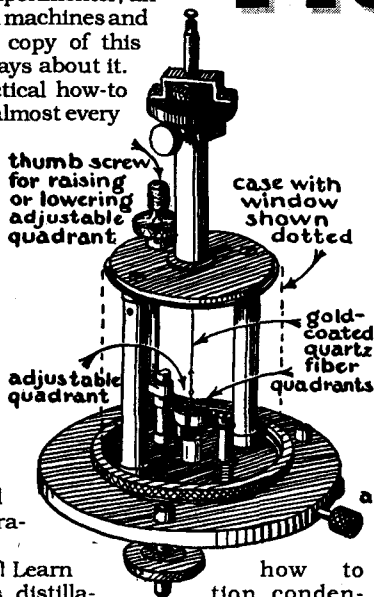
You'll find extensive details on the evaporation technique for aluminum.

Fused quartz is valuable because unlike glass it can withstand extreme temperature changes without shattering. Learn how to build micromanipulators and all the rest of the equipment to produce tiny fibers that can be used for suspending the elements of an electrometer, for cross hairs in optical instruments, or for building a balance. The microbalance shown is supposed to be sensitive down to a billionth of a gram per division!

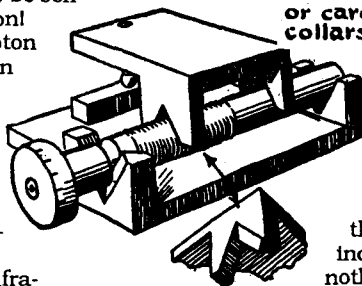
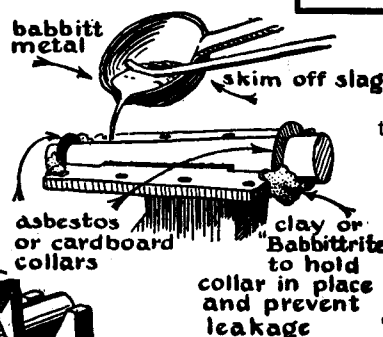
And there's so much more! Build a Compton adjustable quadrant electrometer, a Hoffman electrometer, and others useful for x-ray and cosmic ray work. Build a Geiger counter. You can build your own Geiger-Mueller tube if you master the high-vacuum technique taught earlier. Unfortunately, most of the electronics described is based on vacuum tubes of fifty years ago rather than on transistors.

Build vacuum thermopiles that measure infrared, visible light and ultra-violet so accurately that they can be used to calibrate photographic lightmeters and such. You've heard of carbon arc lights, but do you know how to build iron arc lights? Or low pressure mercury arc lights? And others? You can even build a machine to measure the wavelength of colored light.

Procedures in Experimental Physics



Classic Text! Wall-to-Wall How-to!



You'll find details on hydrogen furnaces, crucibles, burners, electric arc furnaces, and even a lab setup for making artificial rubies and sapphires! And there's much more - even down to what we consider the "easy stuff"

like using a lathe and sand casting.

This is a fantastic book loaded with construction secrets for unusual equipment that you should have. First published in 1938, this baby went through a couple of dozen printings! It's a classic. It's incredible. You should have a copy for reference if nothing else. Highly recommended. Order a copy today.

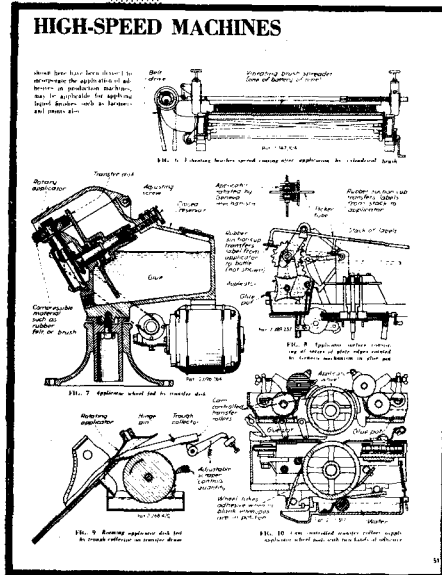
5 1/2 x 8 1/2 sewn paperback 642 pages

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Inventor's Picture Book of Ideas!

HIGH-SPEED MACHINES



variable speed mechanisms; coupling, clutching and braking devices; torque-limiting, tensioning and governing devices; nonmechanical methods of machine and mechanism control; fastening, latching, clamping and chucking devices; and key equations and charts for designing mechanisms.

This is a picture book - over 2,000 illustrations. You'll see collections of everything from nutating-plate drives, snap action mechanisms, permanent magnet mechanisms, adhesive applicators for high speed machines, air spring mechanisms, and on and on.

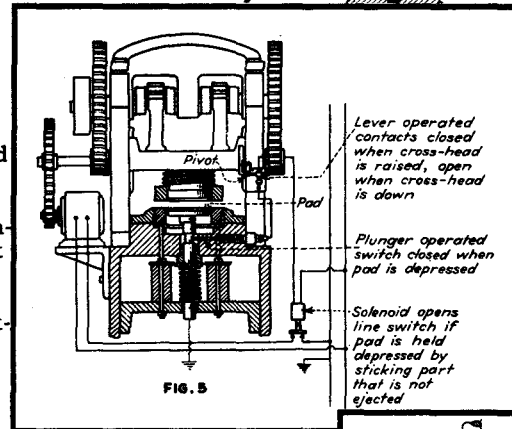
You'll discover this is an incredible reference and idea generator. If you build machines of any kind, you're sure to find something in here to use.

Mechanisms & Mechanical Devices Sourcebook by Nicholas P. Chironis

This is very much like the Chironis book we offered a number of years ago on mechanisms and linkages. I don't have a copy of that to compare this against, but I suspect some of the same material is repeated here, but with much more added. From the preface:

"This book... brings together extensive compilations of modern mechanisms, classical linkages, and machinery devices that provide a wide variety of motions and functions." What Chironis did was clip great ideas from professional design magazines and publish them in a book so that inventors wouldn't have to reinvent the wheel.

Chapters include parts-handling mechanisms; reciprocating and general-purpose mechanisms; special-purpose mechanisms; spring, bellows, flexure, screw and ball devices; cam, toggle, chain and belt mechanisms; geared systems and

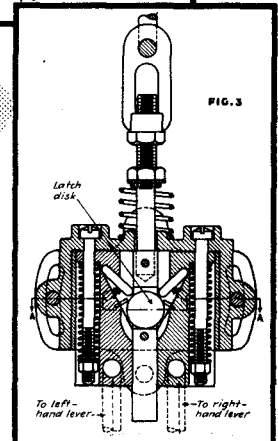
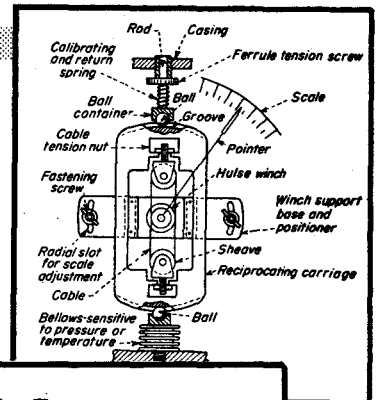


Page after page of unusual mechanisms

And if you love machines (if you don't, you oughta have your *** kicked), you'll enjoy reading this when everyone else is watching a soap opera, watching the neighbors fight, or spraying for roaches. 1991 copyright. Stiff price, but worth it. Get a copy. 8 1/2 x 11 hardcover 447 pages

Cat. no. 1305 \$55.00

WARNING! This is the current price at press time. By the time you order, the publisher will probably have increased the price. Again...



MAKING MECHANICAL MARVELS IN WOOD by Raymond Levy

You get plans, instructions and illustrations to build a cam and follower, the eccentric, the Scotch yoke, the fast-return actuator, a self-

conjugate cam, a stationary steam engine, a single-part mechanism, couplings, Watt's sun-and-planet motion, the Geneva wheel, and several others.

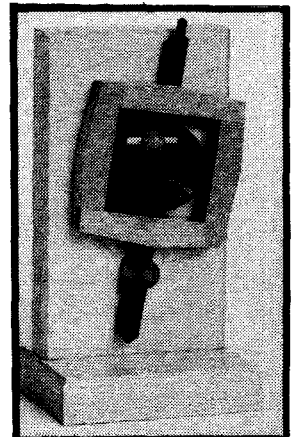
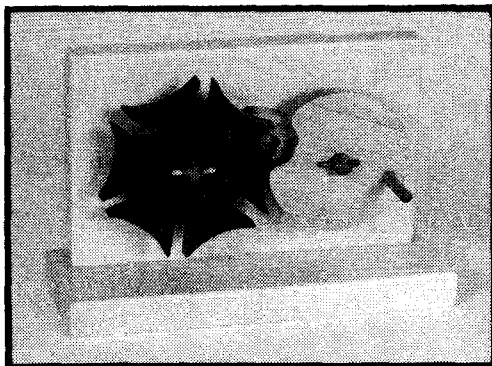
Each is a hard-wood demonstration of a basic mechanical movement that can be quite

Model Mechanical Marvels!

a conversation piece. But even if you don't work wood, use your head. How about making these devices from metal? How about making patterns and selling castings as kits? Or forget the metal, and make 'em out of epoxy and peanut butter. No? Well, you gotta better idea?

Fascinating book for anyone who likes machinery. Great ideas for metal workers. A "must-have" for model makers. Order a copy! 8x10 paperback 192 pages

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Phone Your Order In — Call us at 815/935-5353 during normal business hours (nothing is ever normal when you're forced to work with Lindsay!) and we can get your order into the system immediately.

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SECOND DAY AIR — UPS Second Day air (2-day delivery) costs less than next day air.

PRIORITY MAIL — First Class Mail (all 1st class mail is airmail) costs several dollars more depending on weight and is supposed to provide 3 day delivery to any zip code. (If you live in the South Pacific, don't hold your breath!)

Regular Shipping — Orders are normally shipped via Book Post (US Postal Service) or via UPS depending on the weight of the package.



Lindsay has given up the book business to **STUDY DENTISTRY**

But don't worry. He'll be back. Something tells us Lindsay won't have many clients.

If you need your teeth fixed, our advice is to avoid him. Lindsay doesn't yet know his black-

smithing skills won't work on teeth. When you find he works on your molar as though it were an anvil, no amount of laughing gas is going to keep you in the chair.

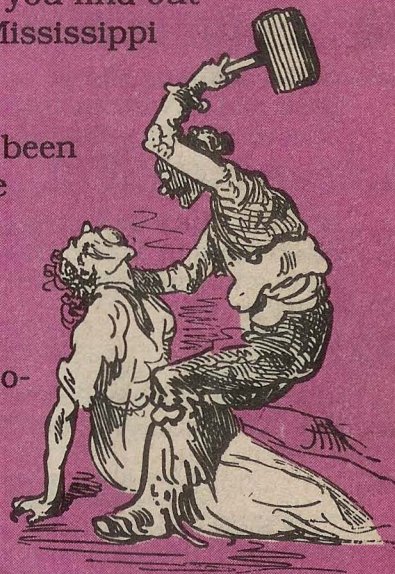
And if you need a bridge, you're going to panic when you find out Lindsay's idea of a bridge is something that spans the Mississippi and supports a fully loaded freight train!

Fillings? He uses Babbitt!

And as for root canal.... well... His few patients have been put through so much agony they're threatening to make him concrete overshoes so that he can take root in the bottom of a canal!

Nah, Lindsay won't make it in dentistry. We're sure that he'll be back to pick out books for the *next* catalog. In the meantime, we think you'll like the one's *we've* chosen. Study them carefully. And then please order. Lindsay is going to need lots of money to pay off his malpractice lawsuits!

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